



**World Summit**  
on the information Society  
Geneva 2003 - Tunis 2005

# WSIS Thematic Meeting on "Measuring the Information Society"

Geneva, 7 – 9 February 2005

## FINAL CONCLUSIONS



World Bank



Economic Commission for Africa



ESCWA



# **WSIS Thematic Meeting: “Measuring the Information Society”**

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## **FINAL CONCLUSIONS**

1. The WSIS Thematic Meeting "Measuring the Information Society", organized by members of the Partnership on Measuring ICT for Development, which includes the ITU, OECD, UNCTAD, UNESCO Institute for Statistics, UN Regional Commissions (ECA, ECLAC, ESCAP, ESCWA), the UN ICT Task Force and the World Bank, took place in Geneva, Palais des Nations, from 7 to 9 February 2005. The meeting was chaired by Ms. Heli Jeskanen-Sundström, Director General of Statistics Finland. Vice chair *cum rapporteur* was Mr. Fred Gault, Director, Science, Innovation and Electronic Information Division of Statistics Canada.
2. The meeting addressed the subject of the statistical measurement of the information society, including a core list of ICT indicators that could be harmonized at the international level and that all countries might consider collecting; the needs of national statistical offices (NSOs) in developing countries as regards technical assistance in the compilation of ICT indicators; and mechanisms to measure impact and to quantify the relevance and contribution of ICT towards improving development and achieving the MDGs.
3. The meeting was attended by 270 delegates from 85 United Nations member countries, intergovernmental organizations, NGOs and civil society. Participants were from National Statistical Offices, Telecommunication Regulatory Agencies and Ministries, and Ministries related to information society activities.

### **Measuring ICT and the WSIS process**

4. The Geneva Plan of Action, adopted by the World Summit on the Information Society (WSIS) in December 2003, in paragraph 28, called upon all countries and regions to develop tools to provide statistical information on the information society, with basic indicators and analysis of its key dimensions. Priority was to be given to setting up coherent and internationally comparable indicator systems, taking into account different levels of development.
5. It is the objective of the Partnership on Measuring ICT for Development to enhance the availability of comparable data and statistics on information society developments, in particular in developing countries. The organization of this Thematic Meeting was thus a concrete contribution to the second phase of WSIS and beyond. The meeting addressed two statistical issues: improving ICT statistics, and, the next steps for developing a broader set of statistical indicators for the information society.

### **Global ICT indicators stocktaking**

6. An important point of departure for improving official ICT statistics in developing countries is to take stock of the current availability of ICT data and indicators. While good information is available about the status of ICT statistics in OECD countries, very little comparable data are available about the situation in developing countries. Therefore, as part of a global inventory carried out in the second half of 2004 by various UN agencies (UNECA, UNECLAC, UNESCAP, UNESCWA and UNCTAD), a metadata questionnaire was sent to NSOs in developing countries focusing on questions related to existing survey vehicles for ICT data collection, national demand for ICT indicators, and current availability of and future plans for the collection of indicators, primarily for households and businesses.
7. The stocktaking (with a response rate of almost 50 per cent) revealed that many developing countries are already collecting some ICT indicators, but these are often limited to only a small number of basic access indicators, whereas few countries are collecting ICT usage indicators.

8. Results from the household section, prepared by the ITU, showed that almost all countries that responded to the metadata survey collect indicators relating to ICT availability while fewer on ICT usage. Data for these indicators are mainly collected through a general household survey, census, or specific ICT usage surveys. Although there are few countries that had conducted the latter, a number of countries expressed their plans to conduct one in the near future. This is mainly due to the high demand for household ICT access and usage indicators. Results also show that some developing countries need guidelines on how to define and collect those indicators and would benefit from countries that had success in the area.
9. Results on ICT business indicators, prepared by UNCTAD, showed that about 60 per cent of respondent countries collect some indicators, largely through established manufacturing surveys or through specific ICT-in-business surveys. Most of the indicators collected are basic access indicators, such as presence of telephone, computer and Internet. Indicators referring to the use of ICTs by business, such as the types of activities carried out through the Internet (including purchasing and selling), or barriers to ICT use are less frequent. However, overall demand for ICT business indicators is high, and many NSOs are planning to collect more indicators in the near future. Asia-Pacific, Central Asia and Central and Eastern Europe are the regions collecting more indicators than others and facing a high demand for ICT statistics, followed by Latin America and the Caribbean. While few indicators are collected in countries of Western Asia, they are the most active in planning future collections. The majority of African countries who responded to the questionnaire are LDCs, with few indicators collected despite a high demand at the national level. These countries clearly need to be targeted by future capacity building programmes in the area of ICT statistics.

#### **The need for internationally comparable indicators – proposal for a list of core indicators**

10. A proposal for a core list of ICT indicators that all countries might consider collecting was presented by members of the Partnership. The proposed list was the outcome of an intensive consultation process with all NSOs, and with experts in the field of measuring ICT. It contained three sets of indicators: basic ICT infrastructure indicators, ICT access and usage by households and individuals, and ICT access and usage by enterprises. The core list is to be complemented by a methodological annex.
11. The list of core indicators presented was accepted as an agreed upon outcome of the meeting (see Annex). It will be qualified by a summary of the comments of the delegates, which this document constitutes.
12. A number of questions were raised concerning gender, language of users of the Internet, additional characteristics of users, such as indigenous status, disability, resident status, and geographical location. Questions were also raised about definitions of the Internet, intranets, extranets, LANS, WANS, and web sites. Language was a 'content' issue, which fell within future indicators to be developed. Other additional indicators that were proposed include the use of public pay phones, trade in ICT services, and more indicators on community access. It was also felt that broadband indicators should distinguish between fixed and mobile. Some of these indicators are discussed below. The other characteristics and definitions were addressed in the discussion of the household and individual indicators and the business enterprise indicators. Feedback from the delegates pointed to the need for more indicators than the core.
13. There was agreement that such a list of indicators:
  - Provides useful guidance for countries wishing to start collecting ICT indicators;
  - Constitutes the starting point for developing internationally comparable statistics on the information society;
  - Should be amended and new policy-relevant statistical indicators added to as experience is gained.

### **Methodologies and model questions – households**

14. ICT indicators require substantial corresponding metadata in order to be fully defined and then incorporated into statistical collection programmes of participating countries. Presentations by the OECD and Eurostat, as well as Germany, Singapore and Egypt offered suggestions on methodologies and metadata associated with the core household/individual ICT indicators proposed earlier. The OECD advice broadly covered: collection methodologies; measurement issues; statistical units; survey scope and coverage; classificatory variables; and, question wording and other metadata corresponding to the core household ICT use indicators. Discussion points included: the appropriate age scope for data on ICT use by households/individuals, and whether a geographic classification and/or an income variable should be included with the metadata. Delegates were invited to provide comments on discussion issues to the OECD.
15. The following conclusions were reached:
  - The OECD's methodological suggestions are useful inputs to developing ICT-related household questions and should be made available to all countries.
  - The Eurostat Methodological Manual, to be released later this year, will be a useful resource for all countries measuring ICT use by households and individuals and should be made available to all countries.
  - Gender information was provided as part of official statistics and other characteristics of people (disabilities, residence status, location...), or of households, could be developed by individual countries.

### **Methodologies and model questions – enterprises**

16. The presentations by OECD, Eurostat, Chile, Philippines, UK, Czech Republic, provided useful suggestions on methodologies and metadata associated with the core business ICT indicators discussed earlier, offering methodological guidance on both the ICT use and ICT sector indicators. In respect of ICT use indicators, information was provided on: collection methodologies for surveys of business ICT use; measurement issues; statistical units; survey scope and coverage; classificatory variables; and, question wording and other metadata corresponding to the core indicators. In respect of the ICT sector indicators, metadata information was provided on: the definition of the sector, definitions of terms used in the indicators, and the definition of ICT goods. Delegates were invited to provide comments on discussion issues to the OECD.
17. An observation that appeared in more than one presentation was the funding of surveys. Part of ensuring the supply of funding was the engagement of the users of the information, the policy Ministries, regulators, and the data suppliers. In developing countries the availability of a reliable business register was a concern.
18. The following conclusions resulted from the debate:
  - The OECD's methodological suggestions are useful inputs to developing ICT business modules and surveys and should be made available to all countries.
  - The Eurostat Methodological Manual will be a useful resource for all countries measuring ICT use by businesses and should be made available to all countries.

### **Future and supplementary indicators**

19. The overarching issue raised was the need to measure the contribution which the equitable dissemination and utilization of knowledge makes to development (ICT impact indicators). This takes various forms, such as the dissemination of health information which alters healthcare delivery, the provision of e-government services which changes the practice of

governance, and the opportunity for Internet users to become e-content providers, which preserves language and other aspects of culture.

20. Delegates also addressed the need to know whether education for ICT usage was available to all groups in society, connecting schools and libraries to the Internet, supporting life-long learning and, in order to develop an ICT skilled population who could use ICT skills at work, in their communities and in other aspects of their lives.
21. Such issues as indigenous status, and language, were matters of significant policy interest in developing countries, and there was support for developing appropriate indicators.
22. Delegates supported an invitation to the Partnership to:
  - Bring together appropriate agencies to prepare a plan for the development of new policy-relevant statistical indicators, such as education, e-government, or health; and to
  - Introduce the topic of indicators for social development and the information society to policy makers and statisticians attending the statistical meeting that forms part of the World Summit on the Information Society at Tunis.

### **Capacity Building**

23. Building capacity in developing countries' statistical systems is essential to improving the production of official information society statistics and a core objective of the Partnership on Measuring ICT for Development. The 'statistical system' is stressed as not all countries have a centralized statistical office, or NSO, and statistics may be the responsibility of policy ministries, regulators, or special agencies outside of the NSO. The Partnership has prepared a comprehensive framework for ICT statistical capacity building in developing countries covering activities at the national, regional and global levels, to be submitted to interested donor agencies.
24. A useful tool/training material for developing countries' statistical offices will be the "Guide to Information Society Measurement", a comprehensive compilation of methodologies and model surveys developed by the OECD's Working Party on Indicators for the Information Society. The OECD will complete the Guide in time for the Tunis Summit. The Guide will contain a non-member annex, containing guidelines about how its recommendations need to be adapted for developing countries.
25. There are a wide range of international statistical capacity building programmes including for example those of the World Bank, UNDP, and UNESCO. Paris21 is a vital forum for the co-ordination of statistical capacity building, and is supported by many international agencies and bilateral donors. The World Bank supports preparation of National Strategies for the Development of Statistics (NSDS) through Paris21 and the Trust Fund for Statistical Capacity Building (TFSCB) as well as investment (through STATCAP) in comprehensive or sectoral national statistical capacity building projects. National projects on ICT statistics can benefit from these funds, and other ICT projects can also include components to strengthen capacity in ICT statistics compilation. As part of the Marrakech Action Plan (MAPS), the World Bank is co-ordinating an international Household Survey Network which brings together national and international agencies who are involved in survey planning and which might wish to consider addressing the topic of ICT statistics.
26. Following the work on agreeing on a list of core indicators, the Partnership now needs to become more active in the area of specialized training for ICT measurement. Questions that need to be addressed include, who to train, criteria for the selection of countries, as well as how to compile material and administer the needed training. One possible scenario envisages the compilation of training material by the Partnership in collaboration with NSOs by using existing materials (such as the OECD Guide) combined with input that would reflect the reality of the recipient countries. In that regard, a special role is envisaged for regional bodies, such as the UN Regional Commissions.

27. The following conclusions resulted from the meeting:

- The Partnership on Measuring ICT for Development is encouraged to engage in activities to assist the statistical community in developing countries to build, or co-ordinate the building of capacity for the collection of ICT statistics.
- The international community is called upon to provide the necessary support to advance the production of internationally comparable information society statistics in developing countries.
- Capacity building and technical assistance programmes should cover areas such as methodologies and definitions, survey implementation and data collection, data verification, database development and analysis.
- Capacity building for ICT should be integrated with existing activities in statistical capacity building and focus on sustainable systems.
- Training workshops should be conducted for local staff involved in the collection of ICT indicators; and for policy makers and regulators to raise awareness about the importance of indicators for monitoring ICT policies and carrying out impact analysis.
- Based on the successful regional consultations carried out in preparation of this meeting, regional networks and technical working groups should be established or deepened, to advance the development on information society indicators, to continue discussions on indicators, model questions and survey implementation at the regional level and to ensure the harmonisation of ICT data and statistics across countries of the region.
- Developing countries, especially the Least Developed Countries, should be involved in international discussions aimed at developing common approaches towards the collection of ICT data and statistics and at harmonizing the work on ICT indicators at the global level.
- Internationally agreed indicators and definitions should be used as a basis for data collection to increase comparability between countries.
- Collaboration between different ICT players in the country is crucial in the collection and dissemination of ICT statistics. ICT policy makers and regulators should liaise with their statistical office to ensure that required data are collected.

### **ICT Indicators and MDG – Benchmarking and Monitoring**

28. In addition to ICT access and use indicators, ICT impact indicators are an essential tool for the policy and development planning process.

29. Impact indicators are a long-term process, nonetheless the planning, development and design of ICT impact indicators needs to be factored in during the earliest measurement planning stages. The World Bank M&E tool kit provides a useful tool for countries in developing their measurement framework for monitoring the implementation and impacts of their national e-strategies. Other international organizations and interested countries were invited to partner with the World Bank and (1) expand and disseminate the toolkit, in particular in non-English languages, and (2) use it in a sample of pilot countries. Further modules of the toolkit, as well as the results of the partnerships mentioned above, would be presented at WSIS in Tunis.

30. The following conclusions resulted from the debate:

- Even though evidence of ICT catalyzing development is widespread, there is a need to formalize the link between ICT and the development agenda, notably the achievement of the MDGs, especially with regards to measurement.

- Countries may need to develop ICT impact indicators first at the national level. Developing countries have a particularly important need to go beyond baseline ICT indicators and assess how ICT is furthering development. SCAN ICT is an important initiative in this area.
- There is a need for a more formalized mechanism for sharing evidence on ICT impact on development. To this end, the UN ICT Task Force will continue the compilation of case studies with ICT impact indicators analysis. The WSIS global stocktaking database will also be an important mechanism for sharing lessons learned in developing an information society.
- Global composite indices are a useful tool in measuring progress over time toward an information society at the national level but need to be carefully designed and applied when considering rankings and regional/national variances.
- The possibility of developing a "Digital Opportunity Index" based on the core set of indicators defined during this WSIS Thematic Meeting will be further discussed at the WSIS Thematic Meeting on "Multistakeholder Partnerships for Bridging the Digital Divide", to be held in Seoul, 9-10 June 2005.
- Some organizations have undertaken efforts to measure ICT impact on development. It will be important to further collaboration and sharing of lessons learned on each of these initiatives as part of moving forward to consolidating a framework on measurement of the information society.

#### **WSIS Tunis and beyond – the future of the Partnership**

- The outcome of this Thematic Meeting should be brought to the attention of delegates attending the WSIS PrepCom2, to be held in Geneva from 17 to 25 February 2005, for consideration in the final documents resulting from Tunis. The mentioning of the Partnership and its work on indicators in the existing draft document prepared by the Group of the Friends of the Chair (GFC) for discussion at the PrepCom2 is welcomed, and the relevant paragraph should be supported.
- A WSIS Tunis side event on measuring the information society should report on progress made since this Thematic Meeting, in particular as regards the amendment of the core list of indicators to include other relevant sectors, such as education, e-government or health.
- Members of the UN Statistical Commission should be informed of the results of this Thematic Meeting, at their next meeting in March 2005.
- The Partnership on Measuring ICT for Development should continue its valuable work on improving the availability of information society indicators in developing countries by addressing its three main objectives:
  - Further elaboration on a common list of core ICT indicators including on other relevant sectors (such as culture, education, e-government, health);
  - Assisting developing countries in their statistical work on ICT indicators; and
  - Building an international database on ICT indicators and making it available on the Internet.

## ANNEX: CORE LIST OF ICT INDICATORS

### Infrastructure and access core indicators

<b>Basic core</b>	
A-1	Fixed telephone lines per 100 inhabitants
A-2	Mobile cellular subscribers per 100 inhabitants
A-3	Computers per 100 inhabitants
A-4	Internet subscribers per 100 inhabitants
A-5	Broadband Internet subscribers per 100 inhabitants
A-6	International Internet bandwidth per inhabitant
A-7	Percentage of population covered by mobile cellular telephony
A-8	Internet access tariffs (20 hours per month), in US\$, and as a percentage of per capita income
A-9	Mobile cellular tariffs (100 minutes of use per month), in US\$, and as a percentage of per capita income
A-10	Percentage of localities with public Internet access centres (PIACs) by number of inhabitants (rural/urban)
<b>Extended core</b>	
A-11	Radio sets per 100 inhabitants
A-12	Television sets per 100 inhabitants



### Core indicators on access and use of ICTs by households and individuals

<b>Basic core</b>	
HH-1	Proportion of households with a radio
HH-2	Proportion of households with a TV
HH-3	Proportion of households with a fixed line telephone
HH-4	Proportion of households with a mobile cellular telephone
HH-5	Proportion of households with a computer
HH-6	Proportion of individuals that used a computer (from any location) in the last 12 months
HH-7	Proportion of households with Internet access at home
HH-8	Proportion of individuals that used the Internet (from any location) in the last 12 months
HH-9	Location of individual use of the Internet from all locations in the last 12 months <u>Response categories:</u> <ul style="list-style-type: none"> <li>● At home</li> <li>● At work</li> <li>● Place of education</li> <li>● At another person's home</li> <li>● Free Public Internet Access Centre (specific denomination depends on national practices)</li> <li>● Charged Public Internet Access Centre (specific denomination depends on national practices)</li> <li>● Others</li> </ul>
HH-10	Internet activities undertaken by individuals in the last 12 months <u>Response categories:</u> <ul style="list-style-type: none"> <li>● For getting information <ul style="list-style-type: none"> <li>○ About goods or services</li> <li>○ Related to health or health services</li> <li>○ From government organisations/public authorities via websites or e-mail</li> <li>○ Other information or general Web browsing</li> </ul> </li> <li>● For communicating</li> <li>● Purchasing or ordering goods or services</li> <li>● Internet banking or other financial services</li> <li>● For education and learning</li> <li>● For dealing with government organisations/public authorities</li> <li>● For leisure activities <ul style="list-style-type: none"> <li>○ Playing/downloading video or computer games</li> <li>○ Obtaining movies, music or software</li> <li>○ Reading/downloading electronic books, newspapers or magazines</li> <li>○ Other leisure activities</li> </ul> </li> </ul>
<b>Extended core</b>	
HH-11	Proportion of individuals with use of a mobile telephone
HH-12	Proportion of households with access to the Internet by type of access from home <ul style="list-style-type: none"> <li>● Response categories should allow an aggregation to narrowband and broadband, where broadband will exclude slower speed technologies, such as dial-up modem, ISDN and most 2G mobile phone access, and which will usually result in a speed of at least 256 kbit/s.</li> </ul>
HH-13	Frequency of individual access to the Internet in the last 12 months (from any location) <u>Response categories:</u> <ul style="list-style-type: none"> <li>● at least once a day</li> <li>● at least once a week but not every day</li> <li>● at least once a month but not every week</li> <li>● less than once a month</li> </ul>
Reference indicator	
HH-R1	Proportion of households with electricity <sup>1</sup>

1. Since electricity is not specifically an ICT commodity, but important nevertheless for developing countries prerequisite for using ICT, it is not included in the core list, but included as a reference indicator, just like the number of households, population, GDP etc. will be.

### Core indicators on access and use of ICTs by businesses

<b>Basic core</b>	
B-1	Proportion of businesses using computers
B-2	Proportion of employees using computers
B-3	Proportion of businesses using the Internet
B-4	Proportion of employees using the Internet
B-5	Proportion of businesses with a website (or web presence where the business has control over the content)
B-6	Proportion of businesses with an intranet
B-7	Proportion of businesses receiving orders over the Internet
B-8	Proportion of businesses placing orders over the Internet
<b>Extended core</b>	
B-9	Proportion of businesses accessing the Internet by modes of access <ul style="list-style-type: none"> <li>• Response categories should allow an aggregation to narrowband and broadband, where broadband will exclude slower speed technologies, such as dial-up modem, ISDN and most 2G mobile phone access, and which will usually result in a speed of at least 256 kbit/s.</li> </ul>
B-10	Proportion of businesses with a Local Area Network (LAN)
B-11	Proportion of businesses with an extranet
B-12	Proportion of businesses using the Internet by type of activity <u>Response categories:</u> <ul style="list-style-type: none"> <li>• Internet e-mail</li> <li>• Getting information <ul style="list-style-type: none"> <li>○ About goods or services</li> <li>○ From government organisations/public authorities via websites or e-mail</li> <li>○ Other information searches or research activities</li> </ul> </li> <li>• Performing Internet banking or accessing other financial services</li> <li>• Dealing with government organisations/public authorities</li> <li>• Providing customer services</li> <li>• Delivering products online</li> </ul>
<b>ICT sector basic core</b>	
ICT-1	Proportion of total workforce involved in the ICT sector
ICT-2	Value added in the ICT sector (as a percentage of total value added)
ICT-3	ICT goods imports as percentage of total imports
ICT-4	ICT goods exports as percentage of total exports