INTERNATIONAL TELECOMMUNICATION UNION

TELECOMMUNICATION DEVELOPMENT BUREAU

Document 016-Erev1
05 February 2008
Original: English

6TH WORLD TELECOMMUNICATION/ICT INDICATORS MEETING, GENEVA, 13-15 DECEMBER 2007

SOURCE: STAT, ITU

TITLE: Final Report of World Telecommunication/ICT Indicators Meeting

_____

Final Report of World Telecommunication/ICT Indicators Meeting
Geneva, Switzerland, 13-15 December 2007

Key Conclusions and Recommendations

1. National and International Cooperation

- ITU highlighted the increasing need for national cooperation in the area of ICT statistics. To appropriately measure the information society, countries are encouraged to collect both, survey (household) data and administrative data from operators. The need to collect household data makes the cooperation between the national regulatory authority and the National Statistical Office (NSO) particularly important. Countries may wish to set up a liaison officer or task group to coordinate the joint efforts of these two agencies.

- It was suggested that ITU set up an interactive online discussion forum/website to allow ITU member states and sector members to communicate and exchange experiences in the area of ICT data collection and dissemination, indicator definitions and survey methodologies.

2. Community Access

Countries with low levels of household access to, and use of, Information and Communication Technologies are strongly encouraged to measure community/public connectivity. As a start, the following indicators were identified to track community access:

A) Percentage of the population that accesses the Internet at community/public Internet Access Centres

This information may be obtained from the following survey question added to a household/individual survey:

Location of individual use of the Internet in the last 12 months:

- Home
- Work
- Place of education
- Another person's home
- **Community Internet access facility (subsidized, or free)**
- **Commercial Internet access facility**

Note: This indicator is the indicator "HH9", from the *Partnership on Measuring ICT for Development*'s Core List of Indicators, see:
http://www.itu.int/ITU-D/ict/partnership/material/set_core_ICT_indicators.pdf

B) Percentage of localities*

- **With electricity**
- **With a public Internet access centre** (This indicator would replace ITU indicators PIAC1, PIAC2, PIAC3, PIAC5).
- **Connected to the public telephone network (fixed and/or mobile)**

* Notes:

- The term 'locality' is the generic term used to refer to a country's villages, towns, and cities. The term may vary, depending on a country's national definition of 'locality'.
- The total number of localities should be provided and localities should be broken down by range (number) of inhabitants so that it is possible to identify the 'percentage of the population with access to ICTs'. This information will help measure the WSIS target to "connect villages with ICTs" by 2015. The suggested ranges for population size are:

` >499, 500-999, 1000-2499, 2500-9999, 10'000-49'000, 50'000 people and more.

3. New indicators:

- ITU will cooperate with the OECD and adopt the same definition for "mobile broadband subscribers". This revised definition, which should only include active mobile broadband subscribers, will be published and used to update the ITU's *Indicators Handbook*. Even though the uptake of mobile broadband has just started, it is important to start tracking this development at an early stage. Current trends suggest that mobile broadband will be an important way of access in developing countries.
- A number of countries highlighted the importance of measuring domestic Internet bandwidth and countries are encouraged to start or continue collecting data in this area.

4. Single ITU Index:

The meeting supported the decision to have a single ITU index to track the digital divide and to measure countries' progress towards becoming Information Societies.

- Data for indicators included in the single ITU index need to be available and collected by ITU for the majority of countries and should primarily be based on data provided and approved by administrations.

- The technical and methodological aspects of the Index should be further discussed and finalized by a group of experts, including experts from member states.

- The single ITU index should be simple and easily understood to increase it usability.

- Specific points with regard to the indicators were raised:
  - The index should not include the international outgoing telephone traffic indicator since it does not adequately reflect the intensity of use, especially with the increased use of IP networks.
  - The proposal was made to exclude the indicator measuring 'international Internet bandwidth'. This proposal was supported by Japan and opposed by others; no agreement on this issue was made.
  - Household data, based on surveys, should be included when possible (i.e. available).
  - Broadcasting indicators could be included.
  - Indicators chosen should reflect all countries' level of development.
  - Considering recent technological developments, it was suggested to include indicators on broadband and wireless Internet services
- Specific points with regard to the methodology were raised:
  - Cut-off limits should be used for certain indicators to show saturation rates (for example for individuals using mobile phones), through the use of 'goalposts'.
  - ICT skills should be taken into consideration if appropriate data are available.
  - The index should be able to measure the digital divide and the development of the ICT sector. To this end, it should also help understand the viability of the ICT sector in terms of revenues and investments.
  - It was suggested to use the standard deviation of indicators through z-score method.

- Countries are encouraged to improve data collection in the following areas:
  - Gender-disaggregated data
  - Data measuring the size of the domestic Internet infrastructure
  - Community access indicators
  - Data on ICT usage by people with disabilities

Final Report of World Telecommunication/ICT Indicators Meeting
Geneva, Switzerland, 13-15 December 2007

Summary

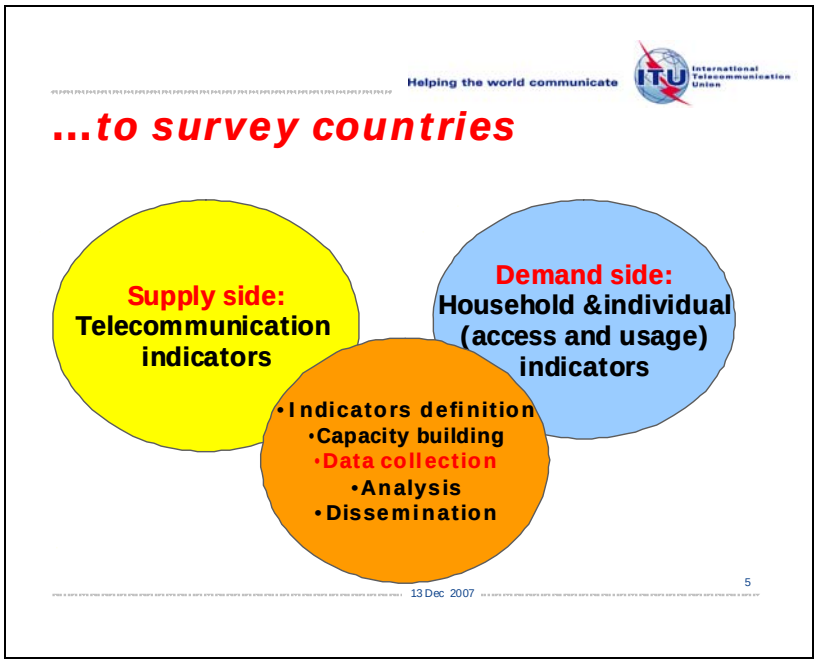
The 6th World Telecommunication/ICT Indicators Meeting—organized by the International Telecommunication Union (ITU)—took place in Geneva, Switzerland, from 13-15 December 2007.[1] There were 171 participants, including 60 women from 78 countries. The meeting was also attended by representatives from the OECD, the World Economic Forum, UNCTAD and COMESA. The meeting was chaired by Ms. Anchalaporn Siriwan from the Ministry of Information and Communication Technology of Thailand. Mr. Russell Southwood, CEO of Balancing Act, was Vice-Chair and Ms Anne Rita Ssemboga, from the Uganda Communications Commission was the meeting's rapporteur.

The 6th WTI/ICT Indicators meetig was opened by Mr Sami Al-Basheer, Director of the ITU's Development Bureau. An overview of the meeting was presented by Mr Mario Maniewicz, Head of the BDT's Policies and Strategies Department. The opening and overview of the meeting put the statistical work of the ITU into a broader perspective. This is particularly important today in the light of the discussion on the information society. ITU is increasingly working with other international partners and organizations in an effort to help measure the information society and to identify appropriate indicators to measure the progress countries are making.

The three main topics of the meeting were community access indicators, new and revised indicators and definitions, and the single ITU index.

Overview: **ITU Statistics**

As the United Nations specialized agency for telecommunications, ITU is responsible for producing statistics covering its sector. Both, the 2006 World Telecommunication Development Conference (WTDC) and the 2006 Plenipotentiary Conference decided to centralize all statistical and indicators work within ITU, in the Telecommunication Development Bureau (BDT). Recently, ITU has expanded its work from collecting mainly supply side statistics (through its World Telecommunication/ICT Indicators questionnaire), to demand side statistics, to cover household and individual data collected through household surveys. Household survey data are particularly useful to go beyond measuring network and access statistics and to track ICT usage. While the first set of (administrative) indicators are collected mainly from regulatory authorities and ministries, household (and individual) data are collected through a questionnaire that is sent to National Statistical Offices (NSO). ITU's data collection covers around 100 indicators for more than 200 economies. For both sets of indicators, ITU provides definitions to help guide countries in their data collection efforts. ITU is also currently preparing a household survey manual, which will be used for capacity building and as training material for NSOs in developing countries. The data collected through the different questionnaires are also published and used to analyse ICT developments in a number of reports and



[1] The programme and background documents are available at the following web site: http://www.itu.int/ITU-D/ict/wict07/index.html

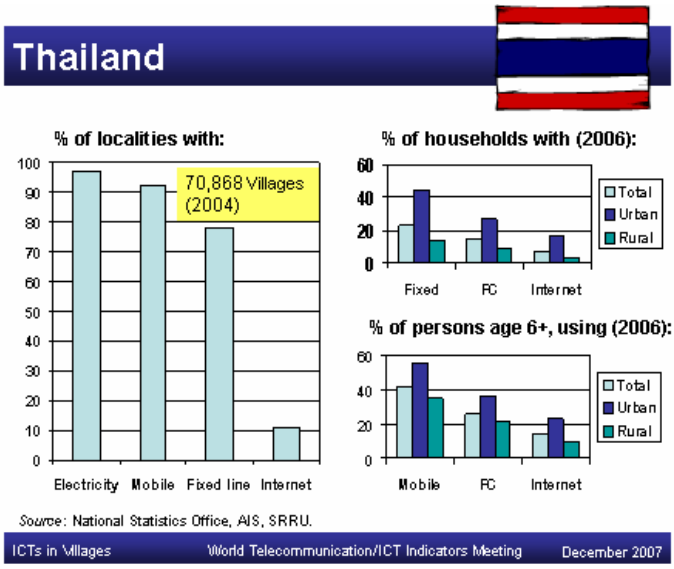
formats. This includes the *Yearbook of Statistics*, as well as the *World Telecommunication/ICT Development Report.*

The first presentation also highlighted the reliance of the ITU on national entities (regulators, ministries and NSOs) to collect ICT statistics. The presentation emphasized the main challenges of the ITU's statistical work, including the limited response rate to the questionnaire and non-response to some questions. ITU stressed the need for increased cooperation between a country's regulatory authority and the National Statistical Office (NSO).

Community Access Indicators

The recognition that traditional indicators (such as fixed telephone lines and mobile subscribers) alone are not sufficient to identify the extent of the digital divide has highlighted the need to measure community or public access to ICTs. Since the vast majority of households in developing nations do not have modern ICTs such as computers and the Internet, community access plays an important role in providing citizens with access to ICTs, a prerequisite for participating in the information society and reaping its benefits. A paper and presentation on "ICTs in villages" *(the paper will be available soon)* will help provide a global estimate for the 'percentage of villages with access to ICTs' (in terms of telephone and Internet access). Data on community access will also help measure the WSIS target on village connectivity[2]. The meeting reviewed the Public Internet Access Centre (PIAC) indicators that were identified at the 2004 'Global Indicators Workshop on Community Access to ICTs'.

The first presentation, on "WSIS target a: ICTs in Villages" gave an overview of the possible ways of measuring global village connectivity. It also presented some results on the percentage of the population covered by various ICTs. The presentation first highlighted some of the difficulties to tracking World Summit on the Information Society (WSIS) target "…*to connect villages with ICTs and establish community access points*". One problem faced is that the target is not specific on the amount or percentage of villages that should be connected. Also, it does not clearly say which ICTs it refers to.



In terms of measurement, many countries do not publish or collect the number of localities and the definition of localities (villages, towns, cities, etc) between countries will vary. There is no standard definition for urban and rural areas, which makes international comparison more difficult.

It is important to collect data on public internet access not only by locality but also in terms of the population size of each locality. Locality data in isolation can be misleading because often the majority of the population is concentrated in a few localities. Available data measuring the availability of internet access and PCs in households show that it is negligible in most developing region. This finding highlights the need for community access. Countries may establish regulatory strategies to connect rural areas, including through universal service obligations (mobile coverage targets) and village payphone programmes.

[2] See the WSIS Plan of Action, paragraph B6, at: http://www.itu.int/wsis/docs/geneva/official/poa.html)

The presentation highlighted two main indicators to measure community access. The first proposal is to add a question on the "Location of individual use of the Internet in the last 12 months" to household surveys (carried out by National Statistical Offices). The second indicator would be collected by the government agency responsible for ICT statistics and cover the percentage of localities a) with electricity b) with a public internet access point c) connected to the public telephone network. This information should be broken down by population size. During the following discussion, a number of countries expressed their concern about the feasibility to collect this type of information, since governments would need to track the number of public internet access points, by location.

Some preliminary statistics

DCCs

	Rural Internet Centre	*Kedai dot kom*	*Medan Info Desa*	*Libraries*	*Total DCC*
Number	42	58	39	225	364

Other PIACs

	Internet Cafés	*Total PIACs*
Number	2,478	2,842

Suruhanjaya Komunikasi dan Multimedia Malaysia. Off Persiaran Multimedia, 63000 Cyberjaya, Selangor Darul Ehsan. Tel : +603 - 8688 8000 Fax : +603 - 8688 1000 www.mcmc.gov.my

The presentation by the MCMC (Malaysia) compared the existing PIAC indicators defined by ITU to available data in Malaysia. A total of 3 out of the 9 PIAC indicators are currently tracked in Malaysia. These are a) the total number of PIACs b) the the total number of DDCs and 3) the total number of other PIACs.

The meeting suggested that for policy purposes it was important for countries to start collecting community access indicators, at least to get a rough idea about the percentage of localities and the percentage of the population covered.

Egypt's experience with community access was presented by the MCIT. It highlighted Egypt's efforts to increase community access (see slide), which is an important part of Egypt's National Telecommunications Plans. These initiatives have increased the number of public Internet access points, as well as the number of users. Egypt has made use of ITU's indicators to track ICT developments in the country, including the indicators on public Internet access centres.

Basic Elements of Egypt's approach to increase community access

- MCIT seeks to guarantee universal, easy, affordable and rapid access for all Egyptian citizens to ICT, and stimulating awareness of the potential uses and benefits of ICT.
- In this respect, MCIT has implemented a number of programs with the chief aim of providing benefits to users, promoting computer literacy, and encouraging increased use of ICT by the public. These initiatives include:

1. Free Internet initiative.
2. PC for every home initiative.
3. IT club initiative.

Following these presentations, the general discussion highlighted that the definition of 'locality' (village, town, etc) should be based on national definitions used. If countries can provide a breakdown of localities by population size, then the percentage of the population with access to ICTs can be calculated. ITU was requested to provide information based on the ITU Regions, including the Arab Region. Also, ITU was asked to collect and publish certain statistics more frequently and not just on an annual basis.

During the final session on the community access indicators, and based on the previous discussion, two indicators were proposed (see slide). It was highlighted that it is important to have a minimum set of indicators that can be collected by a minimum number of countries rather than to have a long list of indicators that will be impossible for countries to compile. To this end, countries have to consider what is practical and do-able in selecting and approving indicators related to community connectivity.

Community Access Indicator 1

Percentage of the population that access the Internet at public Internet access centres

Question to be added to household surveys:
Location of individual use of the Internet in the last 12 months (by rural/urban area):

- Home
- Work
- Place of education
- Another person's home
- Community access (subsidized, or free)
- Commercial Internet access

(Source: Partnership on Measuring ICT for Development HH-9)

Community Access Indicator 2

Percentage of localities*

- **With electricity**
- **With public Internet access centre** **(This indicator would replace ITU indicators PIAC1, PIAC2, PIAC3, PIAC5).**
- **Connected to the public telephone network (fixed and/or mobile)**

To be collected by the government agency responsible for ICT statistics:

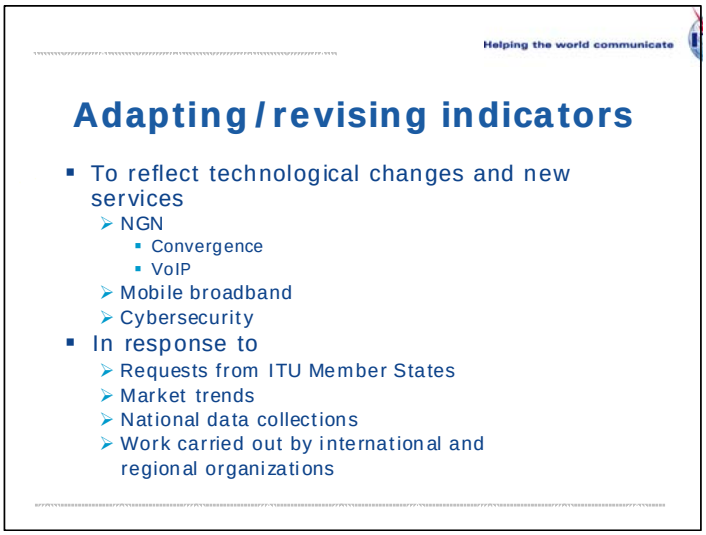
*The total number of localities should be provided and the number of localities should be broken down by population size. Proposed population size:
>499, 500-999, 1000-2499, 2500-9999, 10'000-49'000, 50'000 and above
Note: The definition of 'locality' should depend on national definitions (If breakdown of localities by population size can be provided, the percentage of the population with access to ICTs can be calculated).

Both indicator proposals were accepted, with the following observations:

- Proposal 1: While Indicators Proposal 1 is intended to allow for multiple answers, it would be possible to split the question into two, to track not only all possible access locations, but the 'main location of access'.
- Proposal 2: If a country wants to have additional breakdowns from the Indicator 1, they may cross-tabulate the information with other demographic data collected from surveys.

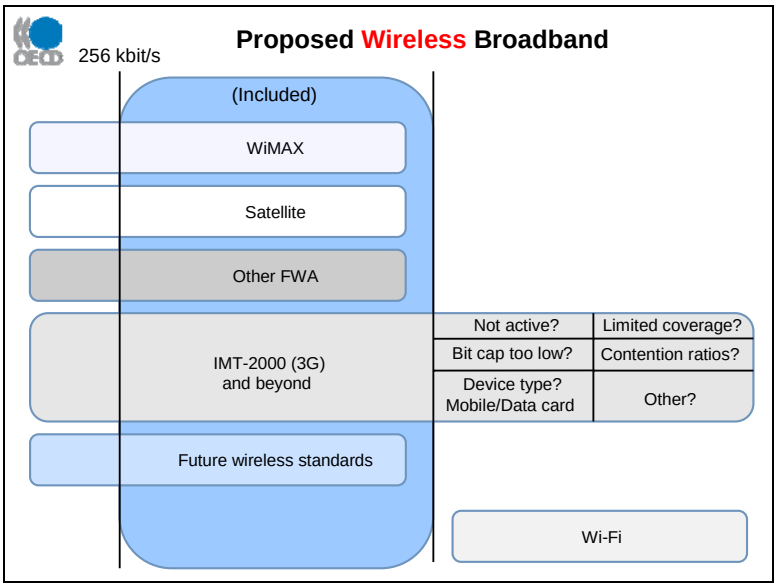
It was suggested that countries should start collecting data for these two indicators and present result and experiences at the next World Telecommunication/ICT Indicators meeting in 2009. The meeting highlighted the importance of national cooperation, particularly between the regulatory agency and the NSO in collecting these two indicators.

Review of existing indicators



The session on new indicators focused on the discussion on new and revised indicators to measure telecommunication and ICT developments. Given the rapidly changing nature of the telecommunication/ICT sector, there is a constant need to update and review existing indicators. The session included a discussion on indicators to measure converged services and mobile broadband indicators.

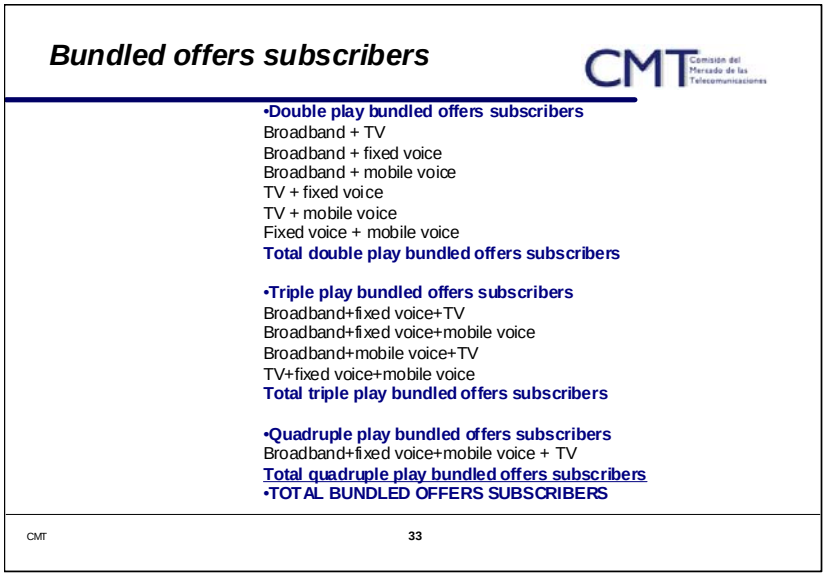
ITU's presentation provided an overview of different indicators that it collects through its annual questionnaires (telecommunication and household indicators) and the revisions made to the existing indicators during the last WTI meeting in 2006. The presentation further highlighted some of the new ITU indicators, including mobile internet indicators and the importance for ITU to measure new trends and developments. The importance of tariff indicators for analyzing affordability of mobile, fixed, and Internet services was also highlighted. Some of the challenges were mentioned in collecting the tariffs, including the difficulty of getting data from the countries, mainly due to multiple tariff packages available. Some participants suggested that countries start collecting domestic bandwidth indicators to reflect actual usage of ICT at the country level.



The OECD presentation highlighted the work the organization is doing in the area of ICT measurements, in particular broadband statistics - OECD's most popular statistics. OECD started the work of harmonizing the data on mobile broadband indicator but face difficulty due to different definition currently in use by countries. Some OECD countries, such as Portugal, have started to collect 3G subscribers based on a definition that distinguishes between active subscribers and potential users of mobile broadband. The presentation also highlighted the proposed wireless broadband technologies that should be included in the definition of mobile broadband (see slide). There are a number of issues that need to be considered in collecting these data. The challenges include issues related to usage (whether to include the active subscribers only), device type (should mobile phones and data cards be considered equally), coverage (should network footprint be considered), contention ratios (should contention for bandwidth be considered) and bit caps (is a minimum monthly traffic allowance necessary).

OECD pointed out that to the best way to collect data on actual usage of mobile broadband services was through official (household and individual) surveys. Even though the uptake of mobile broadband has just started, it is important to start tracking this development at an early stage. Current trends, and especially the limited availability of fixed lines in many regions of the world, suggest that mobile broadband will be an important way of access in developing countries.

The presentation made by the Spanish regulatory authority outlined the work carried out in the area of measuring mobile broadband and converged services. The country currently tracks the number of active lines associated with handsets to access UMTS networks. To track usage, the number of transactions is used to measure actual usage of 3G services for both prepaid and postpaid services. The presentation also highlighted the importance of measuring network convergence trends (see slide), including the number of subscribers by bundled offers.



A presentation on cyber security presented some preliminary input in the area of measuring cyber security, an area where internationally comparable statistics do not yet exist on the global level. While the topic is becoming of increasing interest to countries, it is still unclear which indicators could be used to track the level of cyber security. The ITU presentation showed that currently only some 25 countries have a national strategy on cyber-security.

Single ITU Index

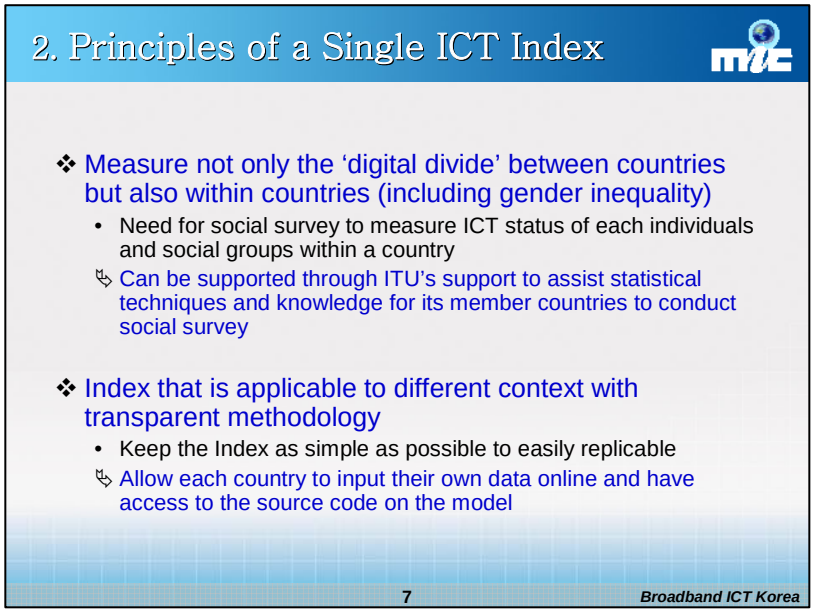
Through Resolution 131 of the 2006 Plenipotentiary Conference, ITU Membership called for the development of a singe ITU index to measure countries' progress towards becoming information societies. To this end, ITU prepared a background document with an overview on index methodologies and indicators.

The single ITU index presentation highlighted the objective and goals for developing a single ITU index. Differences between the Digital Opportunity Index and the ICT Opportunity Index were discussed. Although the two indices use different methodologies and were formulated with different objectives and indicators, the results in terms of the country rankings are very similar. The two indices were compared in terms their methodologies. This included discussion on the frameworks used, the difference between geometric and arithmetic means, the treatment of outliers versus goalposts and overall index computation. It also pointed to the difference in indicators, with the DOI including more household indicators and an emphasis on 'mobile broadband', while the ICT-OI included measures of skills and concentrated on per capita measures.

The DOI and the ICT-OI Methodologies

Feature	DOI	ICT-OI
Number of indicators used	11	10
Number of Partnership core ICT indicators	8	6
Framework used	No explicit framework, but sub-indices are sequenced	Economic model framework
Sub-Index category hierarchy levels	1	2
How Digital Divide is measured	Absolute	Relative
Index formula	Arithmetic mean	Geometric mean
Index computation	Can be done easily by the country, since based on absolute values	Depends on average of values included in the study.
Indicator selection focus	Mobile & internet	Skills, basic infrastructure and utilisation
Indicator type emphasis	Household	Individual
Treatment of outliers and large values	Goalposts	Maximum value adjustments/Scalars

While the meeting supported the decision of the 2006 Plenipotentiary Conference to have a single ITU index, it suggested that an expert group, including interested experts from Member Countries, finalize the methodological details and indicator selection to work towards the single index. A number of concrete suggestions regarding the index were made, including that data used to compute the single index should be collected and available by ITU for the majority of countries. Data should be based on information provided and approved by administrations. Participants further suggested that the single ITU index should be simple and easily understood to increase its usability.



The presentation by the Republic of Korea highlighted the need to develop an index that will take into account different countries' level of development and reflect current trends of emerging technologies such as mobile broadband. Rather than relying on data that ITU receives from its Member states, a more flexible approach of data collection based on the countries' particular context is desirable. Considering that fixed-lines and Internet services are provided at a household level, subscription rate by household is more appropriate than individual per capita units. In this respect, the efficiency of survey method was indicated. Adoption of 'goal post' methodology was suggested to enhance credibility of measuring indicators such as mobile subscribers per capita, where rates above 100 percent may not necessarily represent higher ICT opportunity levels. Also, the standardizing methodology Z-score, which is simple and easily replicable, was recommended to compute the index. The presenter highlighted the advantage of a transparent and easily replicable methodology that allows countries to replicate the index (see slide). The presentation also suggested the inappropriateness of international voice traffic and Internet bandwidth indicators since an ICT index should measure interaction between people within a nation rather than across international boarders. According to the presenter, International voice traffic does not reflect current ICT developments since telecommunication channels are transferring from voice calls via PSTN to VoIP, and various ways of data transition such as emails and messengers are being used. The presenter suggested to measure domestic Internet bandwidth, instead of international traffic. While some participants agreed , others expressed their concern with collecting domestic bandwidth data. Korea proposed to share the Korean methodology with other member states.

Closing and next World Telecommunication/ICT Indicators meeting

Before the end of the meeting, the Ministry of Information and Communication Technology of Egypt offered to host the next World Telecommunication/ICT Indicators meeting, in Egypt at the beginning of 2009.

The meeting was closed by the by the Head of the BDT's Policies and Strategies Department, Mr Mario Maniewicz, who thanked all participants for their active participation. Mr Maniewicz pointed to the substantial progress, as well as the remaining challenges that ITU's work in the area of statistics is characterized by. While the importance of ICT statistics has been widely recognized, more efforts need to be made to track access to Information and Communication Technologies. More and better information is needed to understand the possibilities that people across the world have to participate in the Information Society. To this end countries are encouraged to collect data on community access as well as to carry out household surveys. ITU needs to ensure that its statistics reflect market trends and technological developments; and that the indicators work is responsive to the membership's needs. With regard to the single Index, Mr Maniewicz told participants that ITU will do everything possible to take into account the various comments and recommendations. Based on the meeting's inputs, and in cooperation with country experts, ITU will finalize the technical and methodological aspects of the single index.

Results of the evaluation survey

The participants of the 6th WTI meeting were asked to fill out an evaluation survey to help ITU understand the perceived usefulness of the meeting and to help make improvements in the future.

The results of the evaluation survey confirm the usefulness of the meeting. **65% of the respondents indicated that they found the meeting 'useful', 34% found it 'very useful'.** The responses highlighted that participants appreciated particularly the discussion and review of existing and new indicators and the possibility to discuss the usefulness of indicators and exchange experiences in the area of data collection. It also allows countries to compare their achievements and shortcomings and put national data collection efforts into perspective. To improve the meeting, ITU should provide the background materials for the meeting some time before the meeting, including detailed information on the different topics of the meeting.