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Final Report of the Fifth World Telecommunication/ICT Indicators Meeting Geneva, Switzerland, 11-13 October 2006

The Fifth World Telecommunication/ICT Indicators Meeting – organized by the Telecommunication Development Bureau (BDT) – took place in Geneva, Switzerland, from 11-13 October 2006.¹ There were 150 participants, including 70 women, from 67 countries. A total of 11 international organizations were represented. The participants from countries covered telecommunication Ministries, regulatory authorities, operators, national statistical offices, international organizations and researchers. The meeting was chaired by Dr. R. Zouakia from the Moroccan regulatory authority (ANRT). The meeting was divided into three broad thematic areas (overview, best practices and definitions – as described below) and a total of twelve sessions.

The main theme of the meeting was “Towards Harmonization of Indicators” with its specific thrust being to debate and discuss definitions of the ICT indicators as collected by the Market Economics and Finance (MEF) Unit. This theme was chosen so as to keep in mind the evolving changes in the telecommunication sector as well as to respond to market driven needs to capture trends in usage and access to ICT services.

I. Overview of ITU’s collection, processing, analysis and dissemination

As the United Nations specialised agency for telecommunications, the ITU is responsible for producing statistics covering its sector. By means of an annual questionnaire the ITU collects data for around 100 indicators from more than 200 countries and territories. Data providers are mainly telecommunication ministries and regulatory authorities in charge of the telecommunication sector.

In the course of the agenda, on the first day, the participants were presented with an overview of the work done by the MEF Unit. This covered three broad presentations:

- a) Data collection, dissemination and overview – which covered the scope and range of indicators and also included an overview of the publications in this regard. Here the MEF’s activities were presented in its broader perspective including areas such as the range and scope of indicators, the challenges of data collection as well as the data dissemination that is done through regular publications etc. The presentation highlighted new initiatives such as the ICT-Eye² as well as the high demand for this information. During 2006, MEF received a total of 1’400 requests by email alone, from researchers, universities, etc for ICT statistics.
- b) The MEF presentation on International Cooperation highlighted the MEF’s role in collaborative efforts with relevant specialized agencies that is an outcome of concerted deliberations to develop, and collect 42 core indicators. Together with the definitions, methodologies as well as model surveys, these will help guide

¹ The programme and background documents are available at the following web site:
<http://www.itu.int/ITU-D/ict/WICT06/index.html>.

² The ICT Eye website is a newly created one stop-shop for ICT information and provides telecommunication/ICT indicators and statistics, regulatory and policy profiles, national tariff policies, operator information, financial and scientific institutions, etc. For more information, see:
<http://www.itu.int/ITU-D/icteye/Default.aspx>.

countries in their data collection efforts. The presentation also highlighted its involvement in the contributions to the Millennium Development Goals (MDG) project.

- c) The third presentation was on the MEF Units work on the ICT-Opportunity Index³ and provided a summary of the methodology, and results of measuring the digital divide. The presentation brought out the need to revisit the index in the light of trends witnessed in the telecommunication sector, particularly the rapid growth in the mobile sector that has taken place since 2003, when the index was last published.

A number of points were made following the MEF presentations:

- It was requested that a statistical contact (in MEF) be available not only for French, Spanish and English-speaking countries but also for Arabic, Chinese and Russian countries.
- It was requested that a Report on Arab States Indicators be published.
- ITU should continue collecting and publishing broadcasting statistics as ITU has the mandate to cover all areas related to broadcasting infrastructure.
- Digital divide indices – existence of two indices and its implication were queried. It was mentioned that both were different perspectives with the ICT-OI focusing on broader inclusive specification of variables impacting the ICT opportunity.

II. Data collection – country best practices

The meeting also presented country best practices in data collection, methodology and dissemination and provided an overview of the challenges faced by countries. This covered presentations from Singapore, Tanzania, South America and Oman. Most countries provided a background on the relevant data indicators and results seen in the growth of the telecommunication sector as well as a broad overview of trends in the sector.

The presentation made by Singapore's Infocomm Development Authority (IDA) showed how Singapore uses its telecommunication/ICT statistics to monitor and analyze trends, to formulate new and review existing policies and to raise industry awareness and the general public's understanding of developments and trends. Policies, for example, in the area of education and manpower are based on a set of administrative data and survey results. This includes the formulation of the "Intelligent Nation 2015 Master plan" (iN2015), which has a clear set of ICT related objectives. Statistical information is also extensively used to analyze progress made in the area of the telecommunication sector itself. To evaluate the quality of services provided, IDA has carried out a number of surveys, including an e-Government Customer Perception survey. These surveys that go beyond administrative data collected from operators, analyze the demand-side of ICTs

³ The ICT Opportunity Index was acknowledged by the World Summit on the Information Society (WSIS Plan of Action Para 28a).

and provide insightful results that allow for qualitative analysis and policy review. The presentation highlighted a number of challenges, including the quality and timeliness of data, confidentiality issues, and the relevance of data. The ICT industry is dynamic and driven by rapid technological and market changes. Data collection efforts need to be reviewed and adapted to changing needs in order to be relevant to meet the needs of various stakeholders. To this end, IDA carries out periodic reviews and cooperates with other agencies and users.

A presentation made by a representative from Regulatel – the Latin American Forum for Regulatory Agencies – presented a project to collect, manage, and disseminate regional telecommunication statistics (SIRTEL). The project provides an interactive, online platform that allows member states to provide a set of statistics that the organization has agreed on. The indicators and definitions collected through SIRTEL are largely identical to those collected through the ITU's World Telecommunication Indicators questionnaire. These include traffic indicators, basic infrastructure indicators, revenue and investment indicators, and tariff indicators. SIRTEL also collect data on Public Internet Access Centers (PIACs). Data are used to identify regional differences and carry out benchmarking. In the case of Mexico, which is one of the Regulatel members, ICT data are collected through the census, as well as through specific surveys. They are used – as in Singapore – to review policies, benchmark progress and to identify the importance of the telecommunication sector in the overall economy (which has been increasing). Special attention – through government projects – is paid to the provision of Public Internet Access Centres, which has allowed Mexico to substantially improve access to the Internet to an increasingly large percentage of the population

In Oman, the Independent regulatory authority TRA is responsible for collecting and dissemination telecommunication/ICT statistics. Data are collected from operators that are requested to submit certain indicators on monthly, quarterly and annual basis. Most indicators and definitions have been adapted from ITU. In some cases, data from operators are not available in the format requested and operators have difficulties adopting to the definitions, as well as providing data on time. These administrative data are complemented through surveys, which are carried out in close cooperation with the Information Technology Authority (ITA). This includes a telecenter survey – carried out in collaboration with a university – to identify the need for telecenters. The survey showed that there is a high demand for telecenters, as well as for training in specific IT areas (see slide Tele-centers Survey). The Sultanate also included some ICT specific indicators to a Household income and expenditure survey in order to identify the expenditure on ICTs. ITU's core indicators were used to identify which indicators should be included.

The presentation from Tanzania was done by the TCRA, the regulatory authority, who since 2003 are in charge of the collection of information and statistics from the operators. While TCRA has adopted the ITU list of indicators, challenges are faced regarding the development of an effective and streamlined data collection and survey system. ITU was asked to provide enhanced capacity building measures for data collection, methodology, storage, processing and analysis of information.

III. Classification and Definitions of ICT indicators

ICT Sector Definition

The OECD made a presentation on the revised ICT Sector Definition and classification, which is carried out in response to changing technological and regulatory environment, as well to a growing demand for ICT statistics and analysis. In 1998, OECD countries agreed on an ICT sector classification standard based on the concept of ICT industries. This definition distinguished between “ICT manufacturing industries” on the one hand, and “ICT services industries”, on the other hand. While there are a number of challenges in clearly defining the ICT sector, the revised proposal (ISIC Revision 4) has been able to clarify some borderline cases, while allowing for continuity. This is particular difficult in areas where new ICT related goods and services rapidly emerge and evolve. The ISIC Revision 4 has improved the incorporation of ICT industries and one of the main objectives was to reflect the growing importance of "information" in the economy and in society. This includes the incorporation of a separate definition of the ‘content and media’ sector within the concept of the Information Economy.

Definitions of indicators

A number of presentations were made regarding the main focus of the World Telecommunication/ICT Indicators Meeting 2006, namely the issue of definitions and its harmonization. These were divided into the following areas.

- Fixed and mobile network indicators.
- Revenue and Investment indicators.
- Data network indicators (broadband and internet bandwidth).
- Internet traffic indicators.
- Tariffs and traffic indicators.
- Staff and broadcasting indicators.
- Community access indicators.

Fixed and Mobile network indicators

Dr. R. Zouakia of the ANRT made the presentation on fixed definitions. The key objective was to illustrate how the evolution towards Next-Generation-Networks (NGNs) in developed and developing countries might impact ITU’s current indicators and their definitions. A key idea that emerged was to create a global indicator based on “access” instead of “lines”. The feedback from the audience pointed to the need to re-align the definition of the indicators in congruence with the work being carried out within the other ITU sectors (ITU-T and ITU-R). ITU also needs to learn from national approaches and solutions in incorporating these changes in terms of measurement and definitions.

The presentation on mobile indicators (and particularly 3G), presented by Martin Garner from OVUM, focused on the coverage of mobile connections and its implications for the definition of “active” subscribers. The key message was that indicators should make a distinction between connections and “people” who use services since people may have multiple connections. There is increasingly a difficulty in defining territory as a concept,

given cross border implications. Greater liaison at the field level in understanding the scope of services is a positive way to build on the scope and refine indicator focus to the needs of the market. The discussions in this area centered on confidentiality issues, and the need for segregating CAPEX⁴ related measures for 3G, which could be captured as a distinct indicator.

Ms. K. Mohar of APEK, Slovenia discussed the definition of prepaid subscribers and highlighted the difficulties in defining and measuring “active subscribers”. Usually operators count all subscribers and the SIM-cards sold. Another methodological difficulty is that no distinction is made between 2G, 2.5G, and 3G subscribers. APEK suggest defining an “active” subscriber as someone connected to the network in the past 90 days. A key point that emerged was that Slovenia’s data collection is largely based on ITU’s definitions. The discussions stressed the need to discuss indicators and definition in close cooperation with ITU-T relevant study groups.

Revenue and Investment Indicators

The presentation from ART (Senegal) focused on revenue and investment indicators in the country. At times, it has been difficult to obtain data from operators who are concerned about the confidentiality of this information. Similar to other regulatory authorities, ART Senegal uses a large number of ITU’s indicators and definitions to collect data and to analyze the market. This information is published in an annual report. The presentation also highlighted the success of the mobile sector and the importance of telecentres to accelerate and increase ICT usage in the country.

Ovum in its presentation on investment indicators provided a brief background on the complexity of 3G investment indicators as an incremental layer in the CAPEX and thus the need to capture this element in a 3G specific investment indicator. The speaker also highlighted the difficulty to distinguish between 2G and 3G investments. In terms of recommendations, Ovum invited BDT to look at market and investor driven indicators such as EBIDTA (Earnings Before Interest, Taxes, Depreciation and Amortization)⁵ as well as indicators such as ROCE (Return on Capital Employed) as useful measures in the future.

Data network (including internet and bandwidth) indicators

Dr. C. Charnsripinyo of NECTEC (Thailand) gave a brief background of the telecommunication industry with a focus on internet bandwidth. Internet bandwidth is measured based on the connections that ISPs, telecommunication operators, and research and educational networks have to international providers. The presentation concluded with the fact that the collection and dissemination of Internet bandwidth data is important; and that collaboration is a key factor. It also highlighted the importance of a reliable and neutral party carrying out the data collection.

ARCEP, France’s regulatory authority uses a broadband definition that is similar to ITU’s, except that the minimum speed, set at 128kbps, is lower than that used by

⁴ CAPEX refers to Capital Expenditure and is the amount used during a particular period to acquire or improve long term assets such as property, plant, or equipment.

⁵ EBIDTA is an approximate measure of a company’s operating cash flow based on data from the company’s income statement.

BDT/MEF, in its definitions. Broadband data are collected by technology (DSL, cable, wireless local loop, fibre optic, satellite, Wifi), which also allows revenue data to be disaggregated. Data show that dial-up subscriptions are increasingly being replaced by broadband subscriptions.

ARCEPS's data collection process has been adapting to changes in technology and services, including multi-play. Subscriptions are counted in terms of the services provide so that, for example, one triple-play subscription (voice, data and TV) would be counted as three distinct subscriptions (once in each category). This also allows ARCEP to continue to track traditional indicators, for example, fixed telephone lines. In 2006, ARCEP started to collect 3G data. It distinguishes between multimedia subscribers on the one hand and 3G subscribers that have a SIM card that theoretically allows them to connect to a 3G network on the other hand. ARCEP is facing a number of challenges in collecting 3G data, including the difficulty to define different 3G technologies. Also, operators are reluctant to provide information and data on 3G. The regulatory authority expects these problems to be solved over the next few years, with better definitions and data availability. The presentation comprehensively outlined the modality of data collection as well as its challenges, the latter being the difficulties in obtaining responses from operators.

Internet traffic (Voice over Internet Protocol – “VoIP”)

ARCEP's “VoIP” presentation covered the country specific definition of “VoIP” as used in France as well as its extent of coverage and use. The regulator collects “VoIP” data on subscribers, revenue and volume (outgoing minutes). Broadband services offered over “VoIP” are measured in terms of multiplay access lines that are offered by registered operators that provide “VoIP”. ARCEP distinguishes between ‘lines’ and ‘services, with one line possibly providing several services. ARCEP does not collect data from non-registered operators or service providers that provide PC-to-PC “VoIP”. The presentation highlighted that there are 4.2 million subscriptions to “VoIP” services in the first trimester of 2006, which represent 13 percent of the total telephone subscriptions. ARCEP also highlighted the fact that traffic volumes over “VoIP” have increased substantially.

PointTopic in their presentation mentioned that “VoIP” is growing fast, with almost 20 million subscribers at the end of 2005. A distinction is made between three different types of “VoIP” services:

1. Subscribers access through an independent provider that charges a monthly fee. The provider of the “VoIP” services has no control of the Quality of Service (QoS).
2. Add-on service from a broadband ISP based on a monthly fee. The “VoIP” provider has control over QoS and the equipment.
3. Soft-client “VoIP” (PC-to-PC), which is very difficult to measure.

While subscribers of full service “VoIP” can be measured, it is very difficult to capture soft client of “VoIP”.

The discussion following the presentations centered on the fact that a firm definition on “VoIP” within ITU does not yet exist. The “VoIP” definition has been discussed at different ITU forums and meetings. Thus any definition proposed by MEF has to be in congruence with the intersectoral deliberations in the matter. Other participants pointed to the need to come up with a definition and a methodology to measure “VoIP” so that countries can start measuring this service. Some countries mentioned that data collection in this regard has been started, but collecting volumes is very difficult since there are a number of operators offering this service. A close collaboration with ITU-T Study Group 2 is needed to propose such a definition.

Traffic indicators

In his presentation Mr. B. Vagadia of Intercai Mondiale gave concrete suggestions on all traffic related indicators of the ITU. He emphasized the need to have regional breakdowns for trunk traffic and to split dial-up Internet usage traffic between fixed and ISDN traffic. While agreeing to the definition of international traffic, he also questioned the need to be more explicit on the notion of “public data” traffic and to be sure about what it was meant to connote. Mr. B. Vagadia highlighted that “VoIP” is playing an increasingly important role. In terms of data availability, it would be useful to check with countries what kind of problems they are facing in collecting data. Data reliability was also questioned and should be tracked and discussed.

Tariff indicators

Tarifica, which gave the presentation on tariff indicators, provided several suggestions on definitions. Increasingly, representative or standard tariffs are difficult to find in competitive market situations as options with bundled minutes/services/rates are being offered by operators. It was suggested that ITU data should be based on full rental (as opposed to promotional) prices. Further call set up charge if applicable should also be taken into account. On internal call tariffs – retail prices, often include additional discounts hence caution needs to be exercised in calculating the true extent of the retail tariff. Thus definitions should be made unambiguous. On mobile tariffs, SMS tariffs to other networks could be included. It was further suggested to introduce an MMS charge. In the domain of Private leased circuits, the presenter suggested a separate section for 34 Mbps and also to specify whether local end charges are included or not. Concerning broadband tariffs, it was suggested that ITU standardize on downlink speeds – and recommended 512 Kbits/sec and 2Mb/sec. The presentation mentioned challenges in future definitions with areas such as Free broadband, and mobile definitions especially 3G, 3.5G e.g. Wi Max, and fixed network convergence offers.

The discussion highlighted, as in other sessions that definitions should be developed based on the work of ITU study groups and work carried out in the other two ITU Sectors, in particular Study Group 2 and 3 of the ITU-T sector.

While it is difficult to choose between different tariff plans, one suggestion was to use a ‘basket’ of tariffs, which could facilitate comparisons.

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The present definitions of ITU regarding tariffs indicators make it difficult for operators to pick out a “representative ‘plan’”. One proposed solution is an elaboration of a kind of basket for some services aggregates. (Bulgaria).

The overall conclusion was that regarding national tariffs, it is important that ITU definitions are revised and improved as looking at the evolution of the telecommunication environment and market. The objective should be to have useful and comparable indicators.

Staff and broadcasting indicators

This presentation was focused on occupations in the information and communication technology sector. For employment, the new International Standard Classification of Occupations (ISCO 88) is currently being revised. The occupations should be identified in keeping with the new technologies and skills. At present, data problems on ICT occupations include inconsistency in definitions, classifications and terminology of occupations. There are also differences in data derived from different sources. The participants queried whether there is a way to measure the impact of ICT on employment or on the work force. Some countries highlighted the importance of showing the level of education of the workforce. Regarding ITU definitions of staff, the need is to define full time and professional staff force as distinct categories.

Community access/ universal access indicators

The presentation by Conatel, the Venezuelan regulatory authority, stressed the importance of providing and measuring community access. A number of challenges in measuring community access need to be overcome. This includes the definition of ‘locality’ and the number of community access centers. Unless PIACs need to register, it is very difficult to know how many centers exist and how many people are using them. This is particularly the case for privately run cybercafés since government sponsored or run centres can be captured through administrative data. It was generally agreed that the term ‘locality’ should not be defined by ITU but should be by governments. Also, the definition of “urban” and “rural” areas depends on national use and needs.

The discussion further highlighted the need to capture the impact of the mobile sector in terms of community access. While no concrete measures exist to understand the way mobile technologies have helped to increase community access, it would be useful to identify relevant indicators.

Capacity building needs

MEF Unit made brief presentation-requesting participants to fill in a capacity building questionnaire to identify the challenges, priorities and needs of their country in the domain of ICT statistics. The results of this questionnaire are published on the meeting’s website (please see: <http://www.itu.int/ITU-D/ict/wict06/index.html>).

Venue and date of next meeting

The participants were requested by the chair to provide their feedback on the next meeting. Egypt offered to host the next WTI meeting in October 2007 and several

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participants congratulated Egypt on this offer. One alternative proposal was made to hold the meeting in Asia.

Closing speeches

The concluding sessions were the closing speeches of Chief PSF, the Chairperson, Dr. R. Zouakia, Mr. H.I. Touré, Director BDT, and the Head of MEF.

The Chief, PSF, Mr. P.G. Touré mentioned the importance of the meeting at this critical juncture and the fact that the definition of new and adoption of new and evolving indicators is a challenge. Given the rapid pace of technology as well as the need for congruence in developing common definitions the speech urged participants to interact frequently with the MEF Unit to constantly enhance and review their definitions.

The Chairperson, Dr. R. Zouakia mentioned that the principal lesson to be learnt is that and the choice of indicators and definitions should be based on their relevance, measurability and availability.

Mr. H.I. Touré, Director BDT, highlighted the challenges facing the meeting in terms of a rapidly changing telecommunication/ICT environment. He recognized that the challenges posed by technologies such as NGN and “VoIP”, which are still to be crystallized in terms of its definitional content, required to be discussed, debated and distilled through an active involvement of all stakeholders.

The Head of MEF thanked the participants for their active involvement and participation and mentioned that MEF looked forward to their feedback on the definitions. All comments on the draft definitions (available on the Meeting's web site, at: <http://www.itu.int/ITU-D/ict/wict06/index.html>) should be sent to indicators@itu.int by December 15th. The revised definitions will be translated and published on the MEF web site in all 6 official languages at the beginning of 2007.

Other General issues

- Countries should be given enough time to comment on both the list and definition of indicators and the summary of the meeting. The revised list of definitions will be translated into the UN languages.
- Deadline for comments on definitions should be set not earlier than 20 December 2006 given the Plenipotentiary Conference 2006.
- The results of the evaluation survey and capacity building questionnaire will be made available on the MEF web site.