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**10th World Telecommunication/ICT Indicators Meeting (WTIM-12)**
**Bangkok, Thailand, 25-27 September 2012**



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## 10TH WORLD TELECOMMUNICATION/ICT INDICATORS MEETING (WTIM)
## 25-27 September 2012
## Bangkok, Thailand

# Final Report

1. The 10th World Telecommunication/ICT Indicators Meeting (WTIM), organized by the International Telecommunication Union (ITU), took place in Bangkok, Thailand, from 25 to 27 September 2012. It was hosted by the Ministry of Information and Communication Technology (MICT) of Thailand.

2. The Meeting attracted around 300 participants from 70 Member States, 14 public and private organizations (including academia) and 13 regional and international organizations.

3. The work of WTIM was conducted under the chairmanship of Ms Jirawan Boonperm, Permanent Secretary of the Ministry of Information and Communication Technology (MICT) of Thailand. The sessions were moderated by selected experts from international organizations, governments and the private sector.

4. The meeting focused on the following main topics: national coordination of ICT statistics; ICT infrastructure and access; revenue and investment; quality of service; data traffic; wireless broadband; digital broadcasting; the WSIS+10 review; e-commerce; ICT household access and individual ICT use; and gender and ICT indicators.

5. This report summarizes the presentations and discussions of each session and presents the final conclusions and recommendations of the meeting. Further information, such as the agenda, the presentation slides, contributing documents and the list of participants, is available at http://www.itu.int/ITU-D/ict/wtim12/index.html.

## Opening Session

6. The welcome address for the 10th WTIM was given by **Brahima Sanou, Director of the ITU Telecommunication Development Bureau**. He thanked the Thai Government for hosting the meeting and providing excellent facilities. Mr Sanou highlighted that ICTs continue to grow at an extraordinary pace: there are now more than 6 billion mobile cellular subscriptions worldwide, and 90% of the world's population lives within a range of a mobile cellular signal. Looking at the WTIM agenda, he had taken the initiative to feature a high-level segment to provide an opportunity to address policy issues for better coordination in data collection between telecommunication authorities and statistical offices, to avoid duplication of effort and resources. Mr Sanou referred to the Expert Group on Telecommunication/ICT Indicators that had been working for the last two days in Bangkok and thanked all those who participated and contributed to it. He also emphasized the important topic of measuring gender and ICT and the need for more and better data. Concerning the World Summit on the Information Society, he stressed that ICT indicators are a core element of the review process and thanked the members of the Partnership on Measuring ICT for Development for their contribution to the joint session on this topic. Given the increasing importance of the WTIM, Mr Sanou proposed to change the name of the WTIM to World Telecommunication/ICT Indicators Symposium (WTIS), which was applauded by the participants.

7. **H.E. Anudith Nakornthap, Minister of Information and Communication Technology, Thailand,** delivered the host country opening address. He thanked ITU for accepting the offer of the Thai Government to host this year's WTIM and all partners, experts and speakers for their collaboration. The high level of interest in this forum proves that information sharing on ICT statistics at the international level is necessary to improve the work of national agencies. Mr Nakornthap informed the audience about the initiative "Smart Thailand" led by the Ministry of ICT, to promote the use of ICT as an engine for social and economic development. Evidence-based ICT policy and reliable data are critical to implement such projects. The core list of indicators developed by the Partnership on Measuring ICT for Development has provided useful guidance in this regard and statistical agencies should base their data collection on these core indicators. He acknowledged the promising agenda of the WTIM, featuring a high-level segment on the one hand, and experts involved in the data production, dissemination and analysis on the other hand. As the host of the meeting, he wished all participants an enjoyable stay in Bangkok.

8. **Jirawan Boonperm, Permanent Secretary of MICT, Thailand, and Chair of the WTIM,** delivered her statement. She felt honoured to chair this important meeting and stressed the importance for the Ministry to host this forum, and the need to have well-defined indicators that encompass all aspects of ICT. Ms Boonperm expressed her appreciation to the participants for coming to the meeting to further refine and develop concepts around the area of indicators.

## High-Level panel on national coordination of ICT statistics

9. This was the first time a high-level segment was featured at the WTIM. The high-level panel included representatives from regulatory authorities, national statistics offices, national observatories, and the UN Regional Commission for Asia and the Pacific. The objective of the high-level panel was to address ways and means of establishing a national coordination mechanism to ensure the efficient and timely production of ICT indicators, based on examples of coordination mechanisms that exist in different countries.

10. Ahead of the panel debate, **Cosmas Zavazava, Chief of the Department of Project Support and Knowledge Management, ITU Telecommunication Development Bureau**, presented an overview of this year's WTIM. Mr Zavazava informed the participants on progress made in implementing the recommendations of the 9th WTIM, held in Mauritius in 2011. He referred to the important work of the Expert Group on Telecommunication/ICT Indicators (EGTI), the establishment of the new Expert Group on Household Indicators (EGH), ITU's work with the Partnership on Measuring ICT for Development, in particular with respect to the assessment of the outcomes of the WSIS, and the report to the UN Statistical Commission on ICT statistics. Mr Zavazava also highlighted some of the key statistical publications produced by ITU and pointed to the imminent launch of the Measuring the Information Society 2012 report. He concluded by referring to the new feature of the WTIM, the high-level panel, which was meant to make the event "a trailblazer, a beacon and a barometer on developments in the ICT sector as we move towards the knowledge society".

11. The high-level panel was moderated by **Brahima Sanou, Director of the ITU Telecommunication Development Bureau**. He welcomed the panellists and restated the main objectives of the panel. He also recalled that the topic of coordination among statistical agencies within countries was not new and had been recognized by the United Nations membership as one of the ten "Fundamental Principles of Official Statistics", adopted in 1994 by the UN Statistical Commission. Due to the cross-cutting nature of ICTs, there are a number of actors involved in the monitoring and collection of indicators. This makes it necessary to address the topic of coordination and cooperation among national data producers. In a first round of questions, Mr Sanou invited each panellist to share her/his views and experience in terms of ICT policy and statistics.

12. The first panellist**, Lina Castro, Officer-in-Charge, Office of the Secretary General and Assistant Secretary General of the Philippines' National Statistical Coordination Board (NSCB),** highlighted the role that NSCB plays in the country in coordinating a decentralized statistical system. NSCB has put in place mechanisms that are geared to improving the availability and production of ICT statistics. This includes programmes outlined in the 2011-2017 Philippine Statistical Development Plan (PSDP), which details the importance of producing timely ICT statistics, enhancing capacity of data producers and providers, and increasing and sustaining resources necessary for the production of ICT statistics. The statistical programmes included in the PSDP are the institutionalization of regular conduct of ICT household and government surveys, the compilation of satellite accounts to determine the role of the information society in

the economy, and the inclusion of information society statistics in the system of designated statistics. Ms Castro further highlighted that the country created an Interagency Committee on ICT statistics (IAC on ICTS) in 2006 which serves as a forum for discussions of issues related to ICT statistics, including the review of concepts and methodologies, and monitoring of the overall development of ICT statistics in the country. The IAC on ICTS is currently chaired by the Commissioner of the Information and Communications Technology Office and composed of senior officials from agencies working on ICT. Lastly, Ms Castro mentioned that the Philippines ICT Statistics Portal - a database established with the help of ITU which compiles ICT statistics from different stakeholders in the country - will be launched at the end of September 2012.

13. The second panellist, **Salam Yamout, National ICT Strategy Coordinator from the Presidency of the Council of Ministers, Lebanon**, shared the country's experience in measuring ICT uptake. She provided an overview of how the agency collected ICT data, using the core indicators developed by the Partnership on Measuring ICT for Development. The core indicators were supplemented by other indicators on e-government, R&D, and the ICT economy. Data were gathered from the different ministries in the country and through household and business surveys conducted by private companies. She highlighted the importance of having a sustainable data collection and the need to work with the national statistical office to ensure inclusion of ICT statistics in the regular data collection in the country in the future. Further, she highlighted the importance of using an international classification - such as ISIC - when compiling the data on revenue and output of the ICT sector. She concluded by emphasizing that statistics become useful if they are used for policy-making to measure progress and adjust policies accordingly.

14. Representing Red.es and the Spanish Observatory for the Information Society, **Antonio Casado, Minister Counselor of the Embassy of Spain in Thailand**, provided an overview of the ICT data collection in the country and the agencies involved in the compilation of the data. He highlighted the role of the Spanish regulator (CMT) and the national statistical office in collecting the data for the whole country. The Observatory serves as the leading organization in collection of information and coordinates between the public sector and ICT sector players. The Observatory ensures that the data that are disseminated are based on the same methodology, helps in the planning of the statistical production, centralizes the information and makes the overall process more efficient.

15. **Krishna Oolun, Executive Director of the Information and Communication Technologies Authority (ICTA), Mauritius**, highlighted the importance of ICT indicators in the formulation of policies in the country and informed the audience that Statistics Mauritius was the main authority in the country in terms of ICT statistics. From his experience, there are three main points that should be considered for improving ICT data in countries: a) Leadership – statistics should form part of the mainstream policy; in the case of Mauritius the ICT policy plan states the importance of statistics; b) legislative approach - in the case of Mauritius, the regulator is empowered by law to collect data from operators on a quarterly basis, which it shares with the NSO to publish the data in the NSO's reports; and c) strategy - using a slogan like "intelligent Mauritius" has helped to engage operators by showing that their data will be part of the

branding and to ensure the policies that are defined are based on solid data. Mr Oolun also mentioned their ICT observatory (a website featuring ICT statistics) and that the data are shared regularly with Statistics Mauritius, who publishes them annually.

16. **Haishan Fu, Director of Statistics of ESCAP**, highlighted the important role a regional body plays in providing a forum for countries to share common challenges and experiences related to the collection and dissemination of statistics, particularly through its Committee of Statistics. She mentioned that there are many issues the countries in the region are facing including the lack of ICT statistics since this is a new area for statisticians and due to its fast development. Ms Fu stressed the importance of addressing common issues related to ICT data collection, the different agencies producing ICT statistics, the need to produce standards, and the increasing involvement of private companies in compiling ICT statistics for different purposes. She highlighted that national coordination mechanisms can vary depending on the country situation, while there are several mechanisms that already exist and work. She emphasized that through regional coordination, the different experiences can be compiled and that countries should benefit from learning from each other. ESCAP can play a role through its Committee on Statistics in improving the status ICT statistics. She stressed the importance of promoting the role of NSOs in coordinating different players, and the need for partnerships and coordination of development partners in supporting statistical activities in countries.

17. **Maitree Wasuntiwongse, Advisor to the Director General of the National Statistical Office (NSO), Thailand**, mentioned that the country was at an early stage of coordination of ICT statistics. They used to have a decentralized system, which led to duplication and even conflicting data. This issue has been addressed some time ago and now there is a national Statistical System Master Plan, which was endorsed in 2010 through a cabinet resolution. He highlighted that developing ICT statistics needs strong political backing and mentioned that the NSO is mandated to coordinate national statistics for different sectors, including ICT statistics. Each sector has a committee which is led by the respective Ministry and chaired by the Permanent Secretary. Mr Wasuntiwongse mentioned that the first step in having good ICT statistics is formulating an ICT statistics development plan which will define the statistics needed for policy-making and will identify who will be responsible for collecting those statistics. He also stressed that it is important that each organization takes on that responsibility, and be convinced that ICT data collection is an important task that should be done. He mentioned that the country's draft ICT statistics development plan will be finalized this year and that the next step is for responsible agencies to produce those statistics and submit them to the NSO for dissemination. The plan is to have by the end of next year all ICT statistics available on the NSO website.

18. Following the interventions by the panellists, a lively discussion emerged and questions were raised by representatives from regulatory authorities and national statistics offices from a large number of countries.

19. The delegate from **Egypt** mentioned the work carried out in Egypt and the cooperation with operators and other agencies in the country in collecting ICT statistics. She also mentioned that one of the challenges they face is collecting financial and traffic data from operators, and asked the panellists to share their experience in collecting such data.

20. **Congo (DR)** highlighted the importance of collecting data from operators and mentioned that ICT statistics from household surveys are lacking in the country. He mentioned that they are considering the possibility of engaging a private company to collect the data since their NSO is not ready to collect ICT statistics and was wondering whether this is a good approach or whether they should wait until the NSO is ready to finance an ICT survey. He further mentioned that consultants are submitting their bid for national data collection and that development partners are ready to provide funds necessary for data collection.

21. The delegate from **Brazil** emphasized that ICT statistics play a big role in formulating policy and shared Brazil's experiences and challenges in producing and disseminating quality data. He mentioned that they had formed an expert group, including participants from different stakeholders, which validates the national ICT surveys before they are conducted. In addition, they organize workshops where stakeholders can discuss how to use survey data for policy making. This has proven useful in raising awareness and closer collaboration between data producers and policy makers. He highlighted that coordination is very important since considerable resources are used in collecting the data and they have to make sure that data are used wisely.

22. The representative from **Mexico** mentioned that he found the discussions extremely useful, and that it was important to see that common issues are shared with many countries. In Mexico, the NSO is the main coordinating body and ICT data are produced by the NSO, although various organizations are also interested in the data. The NSO created a coordination mechanism through a specialized technical committee on ICT statistics comprising different players that identify the key issues and future strategies. The NSO, the regulator, and other players are cooperating to be able to define, conceptualize and disseminate statistical information. He also mentioned that one issue that many NSOs are facing is the lack of resources to proceed with data collection. To address this problem, the NSO has included modules in questionnaires to collect information on penetration of ICTs in households and ICT use by individual. He also mentioned that it is important to have a coordination mechanism where different ministries, such as education and finance, can discuss and find solutions related to resources.

23. The delegate from **Congo** mentioned that the NSO should be in charge of collecting the data concerning ICT in households. He mentioned that the NSO wrote to the regulatory body to request resources so that they can conduct a household survey, but their request was turned down and the regulatory agency prefers to conduct the survey themselves. He mentioned that in their case, the NSO needs to insist on the need to have cooperation on data collection among different agencies. He highlighted that the data that are published by the UN agencies are mostly coming from operators and most of them lack the necessary metadata. The delegate

requested the meeting to provide a recommendation to harmonize actions and that agencies should cooperate.

24. The representative from **Zambia** mentioned that certain indicators are not used properly in countries when making decisions. He shared that some of the indicators do not show the right picture and it becomes a challenge in implementing the policy decisions. He stressed the importance of regionalizing, nationalizing and domesticating the use of ICT indicators since national data needs are different from international indicators.

25. The delegate from **Oman** mentioned that they have been collecting the data for indicators on e-government since three years. However, they are not aware of other countries or agencies compiling such data, and would like to find out in order to compare their data.

26. The delegate of **Burkina Faso** emphasized that responsibilities in the country must be shared and it is important to ensure a sustainable governance system in producing statistics. He stressed that data collected at the national level without the stamp of the NSO are not valid and should not be published at the international level. He stressed the importance of coordination between NSOs and regulators in harmonizing definitions and standards. ICT statistics was not an exclusive priority topic for regulators and meetings such as the WTIM provide an important opportunity for NSOs, which have been long ignored in this area, to be put in the picture. He stressed that the main problem of NSO is lack of resources, and that it is important that regulators provide the necessary resources so that NSOs can conduct ICT surveys. He also requested ITU to help find the necessary resources to collect ICT statistics.

27. **South Africa** mentioned that the NSO was responsible for collecting demand-side data via household surveys. The delegate also mentioned that they were having some problem in collecting data from telecommunication service providers. In addition, in their national accounts system, the ICT sector is lumped together with transport and therefore it is difficult to measure the contribution of ICT in the economy.

28. The delegate of **Botswana** shared that they have the same problem where operators are reluctant to submit data. He stressed that it is important to demonstrate to the operators that data are also useful to them. Therefore, they regularly conduct consultations with operators and show the usefulness of the data that they collect. He mentioned that household surveys in the country are carried out by the NSO, but consultation is done with the regulator for any ICT indicators that are included in the population census or household survey. He said that close collaboration between the NSO and the regulator will help save resources.

29. The delegate of the **Central African Republic** questioned the quality of the data coming from operators. He said that for the same indicators, different data are provided depending on the agency collecting the data.

30. Based on the different interventions, the high-level panel debate showed that national coordination is central to the production and dissemination of ICT statistics in view of the

different stakeholders that are involved in both the identification of ICT indicators needed for policy-making and the collection of data for these indicators. This is due to the cross-cutting nature of ICTs and the wide array of ICT-related statistics. Therefore, it is essential that national coordination is in place, using a mechanism that suits best the country's statistical system.

31. The debate highlighted the role of NSOs in coordinating the collection and dissemination of ICT statistics, and stressed the importance of including ICT statistics in the National Strategy for the Development of Statistics (NSDS). The strategy can outline the steps that are relevant for the production of ICT statistics. In addition, it is important that ICT indicators are included in the national ICT strategic plan implemented by the Ministry. Data compiled from operators and service providers by the regulator or Ministry can be shared with the national statistical agency for dissemination. In some cases, a national ICT observatory can be useful in centralizing ICT data and coordinating the data collection among different players. The session also highlighted the importance of using regional and international forums, such as the WTIM, in sharing country experiences. Countries are encouraged to learn from the experience of countries with similar situations or statistical systems.

## Session 1: ICT infrastructure and access indicators: EGTI results

1. The session was moderated by **Susan Teltscher** from ITU/BDT. She provided a short overview of the work of the ITU Expert Group on Telecommunication/ICT Indicators (EGTI) over the past year as well as during the third face-to-face meeting, which was held on 23-24 September 2012 in Bangkok, just before the WTIM.

2. The first presentation was delivered by **Iñigo Herguera Garcia** from the Comision del Mercado de las Telecomunicaciones, Spain and current chair of the EGTI. He reported on the outcomes of the third EGTI face-to-face meeting. Subjects under discussion by the EGTI were: Quality of Service (QoS) for fixed and mobile broadband, broadband transmission capacity, Internet data traffic, mobile-broadband prices and investment and revenue indicators as well as the ICT Development Index (IDI).

3. Concerning QoS indicators, the EGTI agreed that indicators on service activation time and complaints per 100 fixed (wired)-broadband subscriptions will be collected in the same manner as already agreed in 2011. Furthermore, indicators on data transmission speed as well as jitter, throughput, packet loss, and latency should be collected at the national level. Complaints per 100 mobile-broadband subscriptions will be included in the ITU questionnaire, as an indicator to measure QoS for mobile-broadband services. Furthermore, regulators should be encouraged to collect data on data transmission speed achieved in mobile networks at the national level.

4. Mr Herguera presented seven indicators to measure backbone terrestrial transmission capacity, as agreed by the EGTI. The initial data collection for those indicators will be conducted by ITU

under a pilot project. Furthermore, the EGTI agreed on three indicators to measure fixed- and mobile-broadband Internet traffic and a methodology for collecting mobile-broadband prices. The results concerning further work on revenue and investment indicators were presented separately by Ms Magpantay. The EGTI meeting agreed to close the discussion on the definitions of revenue and investment indicators for the telecommunication services sector, but to continue the discussion on the definition of FDI, and on the collection of data for the entire ICT sector (see below). Finally, Mr Herguera presented the proposals for new future work agreed by the EGTI, including: indicators on public expenditure on ICT, measuring m-commerce (to be discussed with UNCTAD), and the revision of the Partnership core indicators on infrastructure and access. The discussion on the IDI will continue and the Chair invited countries to post proposals in the EGTI forum.

5. The second presentation was made by **Esperanza Magpantay** from ITU/BDT, who provided an overview of the results of the discussion in the EGTI on revenue and investment data, which had been identified as a main issue for discussion during the 9th WTIM in Mauritius. Reporting of telecommunication revenue and investment data varies between countries and Ms Magpantay highlighted the importance of having comparable revenue, investment, and foreign direct investment (FDI) data. To this end, countries should use the definition agreed upon in the ITU Handbook for both telecommunication services revenue and investment data. In particular, countries should exclude revenue generated from wholesaling activities and the meeting recommended that the OECD should consider harmonizing its definition with that of ITU. In addition, revenue from rental and sales of end-user devices, and revenue from traditional broadcasting should be excluded. Lastly, license and spectrum fees should be excluded from investment indicators. The EGTI also discussed the scope of the data collection, which should cover revenue and investment data for the entire ICT sector (and not only telecommunication services) following the international definition and classification (ISIC Rev 4). This requires cooperation among different stakeholders at the national level including NRAs, NSO, ministries and other agencies.

6. The third presentation was given by **Tiong Yeow Yeo**, Infocomm Development Authority (IDA), Singapore, who presented the country's experience with measuring QoS. IDA has established a minimum set of rules to be observed by all telecommunication service providers in order to protect customers. Certain compliance benchmarks are set by IDA and in case of non-compliance a penalty will be applied. In addition to the measurement of these benchmarks by operators, IDA also actively monitors operators' performances. Data are not aggregated at the national level, because emphasis is on informing customers on how operators in the country compare. Results are published on IDA's website. Mr Yeo pointed out some of the considerations for QoS measurement. Performance measurements are just snapshots of operators' performances and depend on the time and location of the measurement. In particular, speeds for fixed- and mobile-broadband services are influenced by many factors and thus compliance frameworks must be reasonable. Since March 2011, ISPs in Singapore are

required to measure and publish the typical broadband speeds that end users are likely to be able to obtain.

7. The round of questions from the floor was opened by the delegate from Egypt who inquired about the review of the IDI as well as the amount of new indicators to be collected following the agreements of the EGTI meeting. Furthermore, Egypt asked about the reasons for excluding license fees from investment data and stressed the difficulty of receiving some data from operators or other entities. Egypt pointed out that they would be glad to host a regional capacity building workshop on ISIC classifications related to the ICT sector. A final question concerned additional information about the legal basis for QoS penalties as applied in Singapore. Concerning the reason for the need to exclude license fees from investment data, ITU explained that it was necessary to exclude these as they cannot be considered an investment for improving service or extending coverage, but rather present the basis for operators to provide their services. Mr Yeow responded to the question concerning the legal basis for penalties and explained that IDA draws this power from the telecommunication act which imposes certain QoS standards on licensees.

11. Lebanon stressed the importance of having international standards for data collection and enquired whether ITU will coordinate with international partners. ITU affirmed that is was constantly working on harmonizing definitions with other international organization including the OECD and pointed to the fact that their definition of the ICT sector had been adopted by the Partnership on Measuring ICT for Development of which ITU is a member.

12. India, in line with the comment from Egypt, pointed to the amount of new indicators to be added following the EGTI meeting and expressed concern about the extra burden in collecting this data. The EGTI chair responded by clarifying that the vast part of new indicators to be collected are on broadband transmission capacity and will be collected by ITU (and presented for verification to member states). ITU pointed out that four new indicators will be included in its future questionnaire and that ITU was also regularly reviewing the list of indicators to be included in the different questionnaires.

13. Zimbabwe shared their concern about the inaccuracy of fixed- and mobile QoS data as reported by operators and asked for any suggestions for verifying and validating data. Furthermore, the delegate asked about information concerning the SMS performance test conducted in Singapore. The EGTI chair responded by saying that an organization overseeing the collection of QoS standards should be in place.

14. In a second intervention, Egypt referred to the ICT Price Basket methodology, which is currently based on baskets developed by the OECD and may not accurately reflect consumption patterns in non-OECD countries. Egypt furthermore asked a question on the calculation of the price per minute, especially for bundled offers. The EGTI chair responded by saying that for the new mobile-broadband price basket ITU will use a different basket than the OECD in order to take

into consideration the consumption patterns in developing countries. ITU responded to Egypt's question concerning the calculation of the price per minute by underlining that non-bundled offers should be used. At the same time ITU acknowledged that it is becoming more and more difficult to collect non-bundled offers.

## Session 2: Measuring data traffic

32. The session on measuring data traffic was moderated by Paul Hamilton of Hamilton Research.

33. The first speaker was **Iñigo Herguera García**, current chair of the EGTI. He presented seven indicators agreed upon by the EGTI to measure backbone terrestrial transmission capacity: a) transmission network length (route kms), b) node locations, c) equipment type of terrestrial transmission network, d) network capacity (bit rate), e) number of optical fibres within the cable, f) operational status of the transmission network, and g) percentage of population within reach of transmission networks. Some refinements of the definitions will be made and the item remains as a topic in the EGTI discussion forum. Furthermore, Mr Herguera presented the three indicators agreed upon by the EGTI to measure broadband Internet traffic, namely: fixed (wired)-broadband Internet traffic, mobile-broadband Internet traffic (within the country) and mobile-broadband Internet traffic (outside the country - roaming out). He stressed that fixed (wired)-broadband Internet traffic should refer to traffic generated by fixed-broadband subscribers and should be measured at the end-user access point for both download and upload traffic. This should exclude wholesale traffic, walled garden, IPTV and cable TV traffic. Mobile-broadband Internet traffic is defined as broadband traffic volumes with origin in the 3G networks, upgrades, evolutions or equivalent standards, measured in exabytes. Traffic should be collected regardless of the network used for both download and upload traffic. Walled-garden traffic should be excluded. The three indicators will be included in the 2013 ITU data collection.

34. The second presentation was delivered by **Rita Vala**, Autoridade Nacional de Comunicações (ANACOM), Portugal. She pointed to the increase in data traffic, triggered by growing levels of connectivity, new devices, applications and services and emphasized that there is a growing need to measure traffic instead of merely focusing on subscription data. This information is important to manage network performance, monitor usage and make investment decisions. ANACOM has been collecting mobile-broadband traffic data since 2007 and fixed-broadband traffic data since 2008, through quarterly fixed and mobile services questionnaires. The indicator collected for fixed broadband refers to traffic volume (in GB) of the broadband Internet access service. Problems faced by operators in collecting this indicator include the separation from IPTV traffic, Internet access bundled with IT services (storage, data warehouse, etc.) and leased line traffic. The indicator collected for measuring mobile-broadband traffic is further broken down by traffic with specific connection by USB/modem and Internet traffic in roaming out. Other mobile-broadband traffic indicators include: corporate services (in MB), mobile TV, number of voice calls and minutes of video calls. Ms Vala provided an overview of the results of the

Portuguese data collection which underlines the strong growth in both fixed- and mobile-broadband Internet traffic, while the latter represents a much smaller percentage of total Internet traffic. Usage profiles differ between fixed- and mobile-broadband users, with fixed-broadband users generating an average of 34 GB per month compared to mobile-broadband users generating on average 1.1 GB per month. Mobile-broadband customers generate on average 3.5 times more traffic when accessing via data cards than via handsets. Based on ANACOM's experience, Ms Vala recommended to collect traffic indicators for broadband Internet only, to have separate indicators for fixed- and mobile-broadband traffic and to differentiate between mobile-broadband via data cards and via handsets. She further underlined that indicators need to be clearly defined to allow for (international) comparability.

35. The third presentation was delivered by **Henri Helantera** from Nokia Siemens Network who provided an overview of how mobile data traffic is measured by mobile operators. Total mobile data traffic is booming as more and more people are getting connected and the average data usage per user is growing as well. Mr Helantera underlined that data services are fundamentally different from traditional voice and message services with a rich diversity of different applications and devices. Because of this diversified market, it is increasingly difficult for operators to understand what is going on in the mobile data networks. Furthermore, revenues from data services are not increasing in line with data volume increases. Mr Helantera pointed out that operators need to be able to monitor traffic at a far more granular level and that many are moving into that direction. Mobile data traffic indicators are broken down by: user, device, cell, technology, applications and domain as well as hourly share of daily traffic. Usage profiles tend to differ enormously depending on these different factors. Operators need to understand different user profiles and how they drive traffic and revenue in order to carefully consider their charging profiles and, for example, the implementation of fair usage policies. Furthermore, he pointed out that traffic by demographic characteristics is being monitored as well, including mobile data usage by age. Such data cannot come from the network directly, but requires the implementation of surveys. However, operators can monitor data usage at the subscriber level and enrich data with information available from their customer management service. Mr Helantera concluded that while collecting data at a granular level brings complexities and certain costs, the benefits outweigh the costs since for operators, analyzing mobile data usage across different dimensions (user, application/service, device, cell/cluster, time) is important to better understand the relation between traffic and revenue.

36. **John Garrity** of CISCO System gave the fourth and final presentation of the session. He started by thanking ITU and national regulators who are an important source of data for CISCO. Mr Garrity presented the Visual Networking Index (VNI), CISCO's core data forecasting index on global traffic growth over the coming six year period, which has been released publically since 2007. The latest study focuses on consumer and business mobile data traffic and its key drivers. CISCO estimates that by 2016 global IP traffic will reach 1.3 zettabytes per year, with traffic increasing fourfold over the next five years. Breakdowns are provided for example: by region, major countries, fixed vs mobile Internet, consumer vs business and devices. Mr Garrity

provided an overview of CISCO's forecast methodology which combines data on connections, adoption, usage, bitrates and speeds into an estimate on total traffic. Multiple sources are used for each of the different data, including statistical agencies, regulators, internal data collection, third party analysts as well as data coming from the VNI usage programs. Mr Garrity pointed to some of the challenges related to measuring data traffic, including the point of measurement (or where to measure) which should be at the end user. Data accuracy as well as the application of common definitions are further challenges. Aggregation of data at the national level could provide useful insights as well as the advantage of having more granular data.

37. The first comment from the floor came from India questioning the relatively high weight given to mobile-broadband Internet access in the composition of the ICT Development Index considering that (most) countries are still at the initial stages of adoption and the low traffic volume compared to fixed broadband. In response, ITU invited India to raise the issue in the EGTI discussion forum, where the review of the IDI is a standing item. Mr Garrity pointed out that globally, mobile-broadband traffic accounts for around 10 per cent of global traffic, but is growing at a very high rate. Ms Vala clarified that mobile- and fixed-broadband services usually target different usage profiles and differ in terms of usage speeds and data allowances which are typically lower for mobile-broadband services. Thus it is understandable that traffic is lower for mobile than for fixed broadband.

38. The moderator posed a question to Ms Vala about the willingness of operators to provide Internet data traffic figures to ANACOM as well as to Mr Helantera and Mr Garrity about the possibilities of using some of the same parameters for monitoring both Internet data traffic and quality of service. Mr Helantera mentioned that data sources for both traffic as well as quality of service indicators are often identical and that parameters for measuring data traffic can also be used to monitor QoS. Cameroon inquired about the possibilities of an automated collection of Internet traffic data at the signalling links and how ITU could help in facilitating such a collection. Mr Helantera stated that operators are starting to deploy those systems, but that they are relatively expensive.

39. ECOWAS commented on the backbone terrestrial transmission capacity map by expressing the need to add “land coverage” to indicator g) Percentage of population within reach of transmission networks. Furthermore, ECOWAS underlined the usefulness of mapping data and encouraged ITU to conduct similar projects, including on broadband and ICTs in general. Mr Herguera answered by stating that the intention was to include land coverage as well. Mr Johnson of Point Topic mentioned a project they are conducting for the European Union which maps the availability of broadband infrastructure across Europe. The moderator underlined the usefulness of mapping data and also to compare this to penetration numbers.

40. Ms Teltscher of ITU made an intervention to announce that the seven indicators agreed on by the EGTI to measure backbone terrestrial transmission capacity will be collected by ITU under a pilot project to create an interactive online transmission map, with the help of external

collaborator(s). The data collected will be shared with national Administrations for verification. The project has been launched by the BDT Director recently and is currently ongoing.

## Session 3: Wireless broadband

**41.** The session on wireless broadband was moderated by **Eun-Ju Kim**, ITU Regional Office for Asia and the Pacific, who thanked the chair and welcomed all the participants. She highlighted that broadband is a very important tool to achieve socio-economic growth and to assist in meeting the UN Millennium Development Goals. Although the level of mobile-broadband penetration is low at the moment, Ms Kim remarked that there rests great potential for wireless broadband in the near future to improve accessibility and connectivity. However, it requires initiatives to foster development of infrastructure, creation of appropriate policies and regulations, development of application and increased affordability.

42. In his presentation, **Iñigo Herguera**, Comisión del Mercado de las Telecomunicaciones, Spain, and Chair of EGTI, recalled the agreement reached in the EGTI meeting and the WTIM held in 2011, on mobile-broadband price data collection and reported the progress of work since then. He detailed the agreed methodological principles for a mobile-broadband price basket and shared ITU's experiences in collecting these data for more than 127 countries. Recognizing the challenges and difficulties in the data collection and benchmarking, he briefed the participants on the refinements that have been suggested in the EGTI concerning the mobile-broadband price basket methodology. These included lowering the volume of data from 1 GB to 250 MB and 500 MB (for handsets) and 1 GB for USB/PC-based plans, the change from prepaid only to both prepaid and postpaid plans and the change in the validity period of tariffs selected. The aim is to include mobile-broadband prices in the 2012 ITU price data collection to be conducted in October 2012 and in the 2013 ICT Price Basket.

43. **Agustín Díaz-Pinés** from the OECD**,** shared the OECD experience on developing a mobile-broadband price basket. Recognizing the growing importance of wireless-broadband services, he mentioned the relevance of measuring and monitoring broadband prices and presented broadband penetration levels across OECD countries and across various access technologies. He informed the participants that a mobile-broadband pricing methodology was recently agreed and included in the measurement of telecom prices in OECD countries. While discussing the methodology, he highlighted that the focus is on the amount of data and not on speed. He pointed out differences between fixed-broadband and wireless-broadband parameters such as speeds, data caps, and time restrictions. Taking into account the difference in character related to mobile-broadband services, three types of baskets have been developed for OECD countries: for USB/laptops, tablets and handsets. Mr Díaz-Pinés also shared preliminary results of the data collection amongst OECD countries and mentioned some of the challenges, especially the treatment of handset prices, as they are sold at discounted rates by some operators. In

conclusion, Mr Diaz-Pines summarized that a price basket methodology serves as a meaningful method for comparing broadband prices across countries.

44. The third presenter, **Hock Eng Koay** of the Malaysian Communications and Multimedia Commission (MCMC), started by thanking the ITU for publishing the *Handbook for the Collection of Administrative Data on Telecommunications/ICT, 2011* as MCMC drew experiences from the report, which serves as a very useful tool when collecting the data from the operators and service providers. Mr Koay presented wireless broadband subscriptions in Malaysia for satellite, terrestrial and mobile-broadband services and mentioned that following the data collection experience, MCMC recognized the need for additional information, for example on the accuracy of the data provided by the ISPs, an estimate of the number of subscriptions used in private households as sole means of access, or whether there is an intention to migrate to subscription-based broadband. Mr Koay mentioned the collaboration between the NSO and the regulator in the collection of data and presented two surveys that were conducted to refine administrative records. He highlighted some of the challenges they encountered, such as a high level of dubious cases, the difficulty of having a common reference date, issues with walled gardens, SMS and MMS, and addressing accidental presence on the WWW. In conclusion, he called on the participants to share experience on how to collect data, what should be the frequency of collection and how to address the dubious cases.

45. **Saeed Mashkoor** of the Telecommunications Regulatory Authority (TRA), Bahrain, started his presentation by providing some background of Bahrain and its telecommunication market liberalization history, especially in the context of WiMax. He pointed out that in Bahrain, the intention behind the collection of data was to monitor the development and performance of the sector, to assess the effectiveness of regulation, to inform stakeholders and to facilitate decision making. The Telecommunications Regulatory Authority (TRA) conducts monthly and annual data collections, as well as surveys. The collection of data on WiMax is based on the ITU definition of terrestrial fixed wireless subscriptions included in the ITU Handbook. Some of the challenges for WiMax measurement include the absence of a specific definition for the number of WiMax broadband subscriptions, bundling of services and difficulties in segregation as a result of convergence between fixed and mobile. In conclusion, he proposed that ITU clarify the definition of terrestrial fixed wireless broadband subscriptions taking into account the removal of the mobility restriction, whether both prepaid and postpaid are included, and how prepaid WiMax is defined.

46. Following the presentations, the moderator opened the floor for questions. The delegate from India requested information on whether the statistics unit in the Malaysian Communications and Multimedia Commission (MCMC) carries out household survey on their own or relies on the NSO. Mr Koay responded that in Malaysia the NSO has a household survey but faced with the need for more data need for policy-making and regulation, the regulator collected some ICT data using a household ICT survey.

47. The delegate from Botswana requested the EGTI Chair for clarification on how time-based charges were separated from charges based on data volumes. Mr Herguera responded that difficulties had been experienced in time metered tariff measurement over a shorter period and hence a longer time frame of 15 days had been included to meet the volume threshold. The delegate from Botswana also requested the speaker from OECD for his views on how to avoid duplication when accesses through different modes are involved? Mr Díaz-Pinés clarified that in the OECD people having two different contracts will be counted as two subscriptions and that there is an activity requirement for counting the number of subscriptions. Ms Teltscher from ITU responded that subscribers having multiple SIMs are reported as separate subscriptions. The delegate from Burkina Faso also raised similar concerns on how to count subscribers that have three or four SIMs. He also raised the issue of measuring broadband speeds e.g. how to account for cases where an operator could offer 1 GB, but due to quality of network, the speed is not really available. Mr Díaz-Pinés added that it is for the regulators to see if subscribers are active or not and inactive subscribers need to be eliminated from the reporting. Responding to the question on real speed, he mentioned that the issue should be approached from a quality of service perspective. The delegate from Central African Republic informed that in the Central African Republic, the number of active SIM cards are taken into account and that subscribers that do not have traffic in 3 months are not considered.

    The Moderator thanked all participation and experts and handed the floor over to the WTIM Chair. Before closing the session, **Ms Boonperm** shared some experiences from Thailand. She informed the participants that in Thailand, the Ministry of Information and Communication Technology (MICT) is the ministry responsible for ICT while the National Broadcasting and Telecommunications Commission (NBTC) serves as an independent regulator. NBTC has a separate unit responsible for statistics and they collect and report data. MICT has the National Statistical Office (NSO) attached to the Ministry, which makes coordination easier. She also informed that the survey on ICT use in households was first conducted in 2001 by adding questions to the labour force survey. Since 2005, a standalone ICT household survey is conducted separately every year.

## Session 4: Digital broadcasting

48. The session was moderated by **Krishna Oolun** from the Information and Communication Technologies Authority of Mauritius, who underscored that the objectives of the session were to understand the evolution as well as the measurement of digital broadcasting.

49. The first presentation was given by **Tim Johnson** of Point Topic. He provided a practical definition of Internet Protocol Television (IPTV), which is “to deliver television content to end-users over Internet connections”. IPTV constitutes one of four digital TV platforms among satellite, cable and terrestrial. It can further be divided into “over the top (OTT)” services, which are sent over the open Internet and “IPay TV” services, where the provides invests in dedicated

capacity and for which a fee is usually charged. Mr Johnson outlined how Point Topic compiles data on IPTV, which includes collecting IPTV subscription data from ISP websites, news and regulator reports. Mr Johnson emphasized the need for data, which will help the ITU, other international agencies, national planners and policy-makers to understand the economic, social and cultural impact of Internet digital broadcasting and which will contribute to its successful development. He proposed a number of specific indicators that should be collected, including: 1) number of households using IPTV, 2) hours of viewing IPTV, 3) revenue generated by IPTV and 4) coverage of IPTV. Collecting these indicators would require an innovative approach using for example: service provider data, field surveys, traffic measurement and crowd sourcing. Mr Johnson pointed out that IPTV is often sold as part of a bundle, which makes it challenging to determine the price of, and revenue generated by, digital broadcasting services. However, Point Topic is able to produce statistically valid averages for the price of a particular service through comparisons with standalone services. The speaker concluded that IPTV is of major and growing economic, social and cultural importance, yet complete and consistent international statistics on IPTV are generally lacking. He underlined the relevance and definitions of the metrics outlined above and the importance of reviewing these by the ITU Expert Groups to ensure international comparability of data.

50. The second presentation was made by **Walter Strack** from the United States Federal Communications Commission (FCC), who presented the U.S. experience in measuring digital broadcasting and thoughts for the future. Mr Strack highlighted that the scope of indicators to measure digital broadcasting is still being defined and that data have to be sourced from a number of different sources. He pointed to challenges, such as a) the difficulties of identifying all providers of digital broadcasting services, b) the lack of data and reporting, c) the fact that there is no reporting requirement in the United States, and d) the rise of online video distributors (OVD), which offer video services over the Internet. Mr Strack further added that it should be considered to expand the discussion of Indicators 77 and 78 in the ITU Handbook, to be more explicit and clear that subscribers to OVDs (which is video over the Internet) are not currently included in the definitions of multichannel TV. He concluded with some concrete ideas for the future of measuring digital broadcasting, such as: separately tracking OVDs, collecting data with greater geographic granularity and considering adding additional indicators, such as homes passed and subscribers by service provider.

51. The final presentation was made by **Anne-Laure Durand**, Autorité de régulation des communications électroniques et des postes (ARCEP). She explained that data on digital broadcasting in France is collected from operators (quarterly and annually) as well as through a consumer survey. Ms Durand provided an overview of the evolution of IPTV in France, which was made possible by the introduction of triple play offers that have become increasingly popular since 2004. She shared ARCEP's definition of the number of subscriptions to IPTV services which "includes all eligible subscriptions to an IPTV service, meaning that subscribers are able to access the service independently of the number of available channels and the chosen subscription plan. The indicator takes into account the subscriptions included in 'multiple play'

offers, which allow access to one or several other services in addition to television (Internet access, telephony)." By end 2011, the number of accesses tied to DSL subscriptions reached 12.3 million in France and IPTV penetration was higher than satellite TV penetration. Ms Durand further provided details on the consumer survey results, which showed that since 2007 the IPTV equipment rate of households has been increasing at a constant pace. 35.7 % of households had access to IPTV in the second quarter of 2012. Digital television has been gradually replacing analog television. Henceforth, 60 % of households have access to digital television. To conclude, Ms Durand reported that the European Commission regularly reports on IPTV data and pointed out that penetration is very high in France compared to other EU countries where cable TV is more dominant.

52. The discussion following the presentations included a question for France from Benin on how to calculate IPTV penetration when a household consists of a large number of people. Ms Durand replied that the effective way of doing so is to calculate penetration based on information received by the NSO concerning the size of French households. Ms Magpantay, ITU/BDT, asked why only IPTV tied to ADSL is measured in France, hence excluding fiber connections. Ms Durand explained that in France, fibre is still minor compared to ADSL.

53. The moderator pointed to the convergence between broadcasting and telecommunications and that a unified regulator was needed in order to collect data. Furthermore, the confidentiality of data should be taken into consideration. He concluded that the outcome of the discussion provoked some thoughts and provided an overview of the evolution of digital broadcasting, in particular in France and the United States. The experiences confirmed that the metrics and indicators to measure digital broadcasting currently included in the ITU Handbook require further improvement and revision. In addition, new indicators on services such as IPTV need to be defined and measured, which should be included in the online discussion forum of the EGTI.

## Session 5: WSIS+10 Review (joint session with the Partnership on Measuring ICT for Development)

54. The session was moderated by **Susan Teltscher** of ITU/BDT, who briefly introduced the work of the Partnership in the area of measuring the WSIS targets, which was initiated by ITU in 2009, and has since been brought under the umbrella of the Partnership through its Task Group on the WSIS targets (TGWSIS). One of the outcomes of the work of the TGWSIS was the development of a statistical framework for measuring the WSIS targets. This framework document was launched at the WSIS Forum in 2011 and provides a good basis for countries that collect WSIS-relevant indicators. She recalled that the objective behind measuring the ten WSIS targets was to set measurable and achievable development goals that can track the contribution of ICT to development, through a set of harmonized, reliable and policy-relevant indicators.

55. In the first presentation, **Tiziana Bonapace** of ESCAP presented an overview of the Partnership's work on measuring the WSIS targets. Participants were reminded of the overall objectives of the WSIS - building an inclusive information society and tracking the digital divide. The WSIS

outcome documents call for the creation of statistical indicators to measure progress towards this objective. In addition, the UN General Assembly, through its resolution 60/252 called for an overall review of the implementation of the WSIS outcomes by 2015 and in 2008 ECOSOC recommended, through its resolution 2008/3, that the Partnership should measure progress towards achieving the WSIS targets, in line with the target date of the Millennium Development Goals. Ms Bonapace explained that some of the WSIS targets correspond to indicators already covered by the Partnership core list of indicators (such as target 10), while other targets are more difficult to monitor statistically because there are no corresponding internationally agreed-upon indicators (e.g. target 9). She recalled that ITU had conducted the mid-term review of the WSIS targets in 2010, and had proposed a set of fully-specified quantitative indicators to measure each of the targets, including indicators already in use whenever possible. This set of indicators was published in the ITU World Telecommunications/ICT Development Report, which included the results of a survey on the WSIS targets conducted by ITU in all of its member states, albeit with a low response rate due to lack of data availability.

56. To tackle the lack of data, the Partnership had already agreed at the WSIS Forum 2010 to create a Task Group on Measuring the WSIS targets, with the objective to refine the initially-proposed indicators and to enhance the availability of data. Currently the Partnership "Statistical framework on measuring the WSIS targets" includes a set of 49 indicators to track the 10 WSIS targets, plus 3 indicators on ICT use in business. Ms Bonapace informed participants that in view of the overall review of the implementation of the WSIS outcomes in 2015, the Partnership will conduct a metadata survey on the availability of data on the WSIS target indicators with the objective to identify the main data gaps. The metadata survey will be conducted by the UN Regional Commissions - ECA, ECLAC, ESCAP and ESCWA, in their respective regions, in October 2012. A questionnaire will be sent to ICT Ministries and is to be filled out in consultation with relevant other ministries and organisations, such as the national statistical offices. Reponses should be returned before the end of November and countries were encouraged to participate actively. In continuation, ESCAP announced that, in cooperation with the Partnership it will organize an intergovernmental meeting to review and validate the metadata survey results and coordinate on regional perspectives. Furthermore, countries were also encouraged to start collecting the statistical data necessary to report on the WSIS outcomes by 2014. Such data will be collected by the Partnership in 2013 for the preparation of the final quantitative assessment report for the WSIS+10 review.

57. The second presentation was given by **Peter Wallet** of the UNESCO Institute for Statistics (UIS), who focused on the results of two recent data collection exercises conducted by the UIS in Latin America and in the Arab States and covering WSIS targets 2 and 7 related to ICT in education. He explained that the need to improve the availability of data on ICT use in education stemmed from growing demand for such data both from the analytical community and a series of international commitments, such as the 2003 WSIS Plan of Action, the eLAC2010 strategy for the Information Society in Latin America, the Education for All goals (EFA), the Millennium Development Goals (MDGs) and the New Partnership for Africa's Development (NEPAD) e-

schools initiative. Similarly, he quoted a number of country initiatives to foster the use of ICTs to support, enhance and enable the delivery of education, such as the El Ceibal project in Uruguay, the Smart School Project in Malaysia, the Russian e-learning support project, the Belarus State programmes and the E-reader project in Ghana, Kenya and Uganda. The Partnership core indicators on ICT in education were proposed by the UNESCO-led Working Group for ICT Statistics in Education (WISE) and adopted in February 2009 by the United Nations Statistical Commission (UNSC) at its 40th session.

58. More recently, UIS has piloted a new survey on ICT in education in Latin America and the Caribbean. This formed the basis of a series of regional surveys launched in 2012, with the aim to gather internationally comparable data, to enable countries to learn from the experiences of others by identifying key conditions in which ICT can reinforce educational outcomes. The surveys ran in Latin America and in the Arab States and focused on issues such as ICT infrastructure in schools, pupils' access to and participation in programmes using ICTs and teachers' ICT related training and use of ICTs, and corresponding to WSIS targets 2 and 7. Mr Wallet presented some of the survey results for the Latin American and Arab States regions and ended by indicating that more data will be published in 2012 and 2013, covering also the Asia-Pacific and the francophone Sub-Saharan Africa region. Countries were encouraged to collect and disseminate data on ICT in education, following the methodologies developed by UIS and the Partnership, in particular with respect to data necessary for the WSIS assessment.

59. The third and final presentation was delivered jointly by **Kamla Al-Rahbi** from the Information Technology Authority and **Sultan Al-Wadhahi** from the Ministry of Education, Oman. The presentation covered the experience of the Sultanate of Oman in collecting data on the WSIS targets. Oman recalled its commitment to achieving the WSIS targets by 2015 and to implement the WSIS Action Plan. To measure progress achieved with respect to these commitments, Oman follows the guidelines and methodologies on measuring the WSIS targets established through the work of the Partnership. The presentation covered the results of the ICT in government survey (WSIS targets 5 and 6), the ICT infrastructure indicators (targets 1, 8 and 10), and the results of measuring ICT in education (targets 2, 3 and 7). The results demonstrate clear progress but considerable work still needs to be done in a number of areas such as in improving the proportion of ICT-qualified teachers in schools.

60. The discussion following the presentations included comments from Guinea Bissau and Burkina Faso who raised the issue of cost and financial resource availability for collecting data on the WSIS targets, especially in countries with a large population. India expressed an interest in having e-health and e-government indicators reflected in the ITU ICT Development Index and encouraged countries to improve the data collection in this area. Brazil expressed great interest in measuring ICT in education and showed that 2012 was the third year of the Brazilian data collection in this area. The Brazilian experience pointed at the need to expand the data collection to measure other aspects such as the barriers faced by teachers in adopting ICT in their teaching and the use of open educational resources. Burkina Faso expressed an interest in measuring ICT in health and online training. Finally, Egypt requested further guidelines for

improving its data collection on targets 3 and 4 (on scientific and research centers, and connecting libraries and museums). Measuring ICT in education is also recognized as a priority in Egypt, where the Ministry of Communication and Information Technology (MCIT) conducted already two surveys on ICT in education, exploring aspects such as ICT infrastructure, ICT usage and measuring the impact of ICTs on improving the quality of education in Egypt.

## Session 6: Measuring e-commerce (joint session with the Partnership on Measuring ICT for Development)

61. The session was moderated by **Torbjörn Fredriksson** from the UN Conference on Trade and Development (UNCTAD) who briefly introduced the subject, noting that e-commerce offers significant opportunities for developing countries, but several country-specific challenges have hampered its uptake. Although data from private sector sources indicate rapid growth (about 44% in the past 10 years) in e-commerce, official statistics remain scarce. Policy makers and analysts are obliged to rely on private sector data which may apply different methodologies, have limited geographical coverage and are often expensive.

62. A small number of Partnership core indicators relate to e-commerce but are available only for a limited number of countries and do not capture the value of such transactions nor whether they are domestic or international. Available data suggest highly diverse levels as well as growth in e-commerce among countries, as well as a clear divide in such use between large and small enterprises. These trends point to the growing need to measure e-commerce in order to adequately inform ICT policy makers. In particular, looking at the value of transactions, identifying the part of e-commerce in domestic and international trade, and assessing its impact on enterprise performance would enhance e-commerce measurement.

63. **Seung Keon Kim**, Korea Association of Information and Telecommunication (KAIT), made the first presentation, on the measurement of domestic e-commerce usage, effects on sales, and e-commerce turnover. The Republic of Korea started engaging in domestic e-commerce in 1996. By 2011, already more than 20% of enterprises were using e-commerce, reaching a turnover of USD 829 billion of mostly B2B transactions. The government's ICT policy is closely linked to the continued growth in importance of e-commerce in the country, supported by the country's excellent broadband infrastructure, high level of ICT literacy, as well as strong consumer protection. Korean official statistics show that e-commerce has halved the treatment cost for sales transactions, and businesses of all sizes now consider e-commerce of strategic significance.

64. The country produces good quality data on the value, volume, and impact of e-commerce. These data are obtained through regular surveys that are supported by a strong statistical and regulatory framework that obliges respondents to provide comprehensive information (including on turnover). It also mandates different sources of official statistics and administrative data (the national statistical office, regulator, tax authorities) to share and cross-verify information. The dissemination of data is ensured through regular online and paper publications,

publicly accessible. The Korean case is a good example of a virtuous cycle between statistics and policy. While a well-guided ICT policy supports the growth of e-commerce in Korea and justified its measurement, statistics provide policy makers with the necessary evidence to support moves such as the development of e-commerce legislation (for example, the Act on Consumer Protection in Electronic Commerce Transactions) and investments to maintain the country at the cutting edge of ICT infrastructure and services.

65. The second presentation by **Rami Zaatari** from the UN Economic and Social Commission for Western Asia (ESCWA), looked at regional efforts to measuring e-commerce, including harmonization and benchmarking. Despite the lack of official data on e-commerce in the region, and wide variations in the information from private sources, Mr Zaatari noted that the main e-commerce enablers in the region have been strong growth of ICT penetration, in particular mobile telephony, and e-government programmes that have boosted G2B transactions. A notable trend has been the rise of group buying websites. Barriers to e-commerce include the lack of a regulatory framework, security and privacy concerns (no consumer protection and dispute resolution mechanisms), as well as limited availability of e-payment options, and, not least, the cost of broadband connectivity.

66. The ESCWA region has encountered significant challenges for the measurement of e-commerce. A 2009 ESCWA study, which looked at how countries could measure the part of e-commerce in international trade of goods, found that customs data do not capture e-commerce, while household surveys only cover B2C (the smaller part of e-commerce). The study found that enterprise surveys remain the preferred source of e-commerce data, although few countries in the region collect business indicators through such surveys, and the periodicity of economic censuses is too low to include ICT indicators. It proposed model questions on online sales and purchases that go beyond the Partnership core indicators, such as whether goods are physical or digitized, whether the transactions are domestic or import/exports, about the commodity classification and the top trading partners (countries). ESCWA requested feedback from participants on whether it would be feasible to implement the proposed model questions, and whether enterprises would be able to provide the requested information.

67. In the third presentation, **Matthias Helble** from the Universal Postal Union (UPU), showed that the international postal system represents a novel source of data on e-commerce. It contributes as an e-commerce agent by selling goods and services, as well as a provider of logistical services for the delivery of goods purchased electronically. Delivery data appear to show a correspondence between the number of parcels delivered and growth in e-commerce turnover. UPU's annual survey of designated operators provides quantitative and qualitative data on the e-services offered by postal operators, and on postal traffic. While UPU has identified 55 e-services, there is still a need to determine which ones would qualify as e-commerce. Traffic data can be combined with data generated by UPU's daily scans of electronic data interchange (EDI) messages for international postal exchanges (bilateral flows among more than 150 countries, and eventually HS codes). Looking forward, private sector data from top e-commerce companies

such as eBay, Amazon or Paypal, could also be matched with the UPU data to estimate the magnitude of e-commerce and yield new insights on its organization.

68. The discussion that followed raised several issues to be explored further by the Partnership. Several countries suggested that the current e-commerce definition be revised in order to reflect new, significant trends, such as mobile commerce and collective buying. In this context, Brazil indicated that it considered piloting a question on collective buying, the results of which might serve as a valuable reference to other countries. Several participants also noted the importance of measuring the value of e-commerce despite the reluctance of enterprises to provide data on turnover. Mr Kim was asked how Korea could obtain such data, and he noted that companies are obliged to provide accurate financial information and are even subject to sanctions if they fail to do so. In addition, KAIT, the national statistical office and the revenue service have a cooperation mechanism to share and cross-verify financial information on a regular basis. It was suggested that countries could explore data from credit card companies in order to measure the value of e-commerce.

69. In relation to the issue of value, Egypt asked whether outsourcing of services should be included in the calculation of e-commerce. UNCTAD responded that, to the extent that the service is ordered online, it should be considered as e-commerce. In this context, reference was made to a new task group that will be formed in the Partnership on Measuring ICT for Development to develop indicators on trade in IT services and ICT-enabled services. UNCTAD invited interested countries and organizations to express their interest in participating in the forthcoming work.

70. The delegate from the Philippines shared the work of the country's Department of Trade and Industry (DTI) in implementing the ASEAN e-commerce database project, which aimed at consolidating information on and measuring the implementation of e-commerce activities within ASEAN. The project combined different research instruments: desk-based research on country profiles and available e-commerce indicators; and consumer surveys and business surveys. With respect to lessons learned on the measurement process, the project found that centralizing data gathering activities helped to alleviate pressure from responsible agencies of each country and provided a uniform data set from compatible sources; the consumer and business surveys should be uniform and implemented online; online advertising and promotion of the survey should be properly funded; and surveys should be as streamlined as possible. The project report concluded that the database will be an effective tool in measuring the progress of the ASEAN ICT Master Plan 2015.

71. Brazil and Thailand noted that they have also produced e-commerce statistics from a combination of data sources. Brazil conducted household and business surveys specifically on ICT use and penetration, which included perception questions on barriers to e-commerce and effects on sales; however, the value of e-commerce had to be measured as an estimated percentage of overall sales rather than as monetary value. Thailand obtained information on the number of registered e-commerce entrepreneurs from the Ministry of Commerce and surveyed a sample of them with respect to their estimated transaction value (B2B, B2C, and B2G), while

further data on B2C was gathered through a survey of Internet users. Both Thailand and Korea highlighted that one of the main difficulties in measuring e-commerce has been determining the sampling frame. Korea noted that it is difficult to keep track of active companies (entering and exiting the business registers), which in turn affects the quality of the sampling frame and the selection of survey respondents; they are currently exploring the possibility of using GPS technology to maintain the business register updated. Thailand has a major problem in capturing entrepreneurs without a fixed location, mostly informal and micro-enterprises, which nonetheless make up the bulk of enterprises in the country.

72. In relation to qualitative data on e-commerce, Benin asked whether cybercrime should be measured as it constitutes a key barrier to e-commerce. Uganda asked if any organization had experience in measuring mobile commerce (transfers and payments), and what role the regulatory framework in this area could play in enabling e-commerce. The Philippines stressed that the ASEAN study on e-commerce had confirmed the importance of creating trust, including through a legal framework to support e-commerce. In response, UNCTAD drew attention to its technical assistance programme on cyberlaw harmonization, through which it can assist developing countries.

73. The discussion highlighted the potential to cross-reference different sources of data in order to obtain a comprehensive picture of e-commerce at a domestic and regional level. ESCWA mentioned the possibility of combining the results of modules included in business surveys (on overall trends regarding e-commerce activities and flows), stand-alone ICT surveys on particular economic sectors (gathering more details on types of goods and services traded, value and volume of e-commerce, and payment methods), and household surveys (for the B2C component). Customs data can serve to verify trade flows, and other sources such as the postal system and credit card companies could help to control for quality of data obtained by NSO.

74. The moderator concluded that countries should request assistance from international organizations, notably the Partnership on Measuring ICT for Development, in improving the measurement of e-commerce. Such assistance may involve developing methodology, reviewing definitions, and expanding the current core indicators as well as capacity-building through training and advisory services. The work on new indicators should take into account previous and ongoing work by various stakeholders.

## Session 7: Measuring ICT access and use through household surveys

75. The session was moderated by **Héctor Nambo** from INEGI (Instituto Nacional de Estadística y Geografía), Mexico, who briefly introduced the topic and asked participants to focus their interventions with a view to provide guidance for the improved measurement of access and use of ICT in households and by individuals, paying particular attention to indicators related to Internet activities, barriers to Internet access and frequency and time intensity of Internet use.

76. The first presentation was delivered by **Alexandre Barbosa** from NIC/CETIC Brazil, Chair of the ITU Expert Group on Household indicators (EGH). He recalled that following the recommendations of the 9th WTIM, ITU launched in May 2012 the EGH, with the objective to revise both the Partnership core indicators on ICT access in households and use by individuals, and the ITU Manual for Measuring ICT Access and Use by Households and Individuals, in collaboration with ITU member states. Mr Barbosa explained that the EGH carried out most of its work through an online discussion forum set up by ITU. The revision work included both changes to existing indicators that need updating in line with the evolution of technologies and services, and discussions of new topics and indicators, to reflect recent growth in new applications. Mr Barbosa provided an overview of the structure of the online discussion forum, which is organized around the following topics: general information; revisions to existing core indicators; proposals for new indicators; cross-cutting issues; and reference documents. At the time of the WTIM, the EGH counted 97 registered experts from 45 ITU member states, working in National Statistical Offices, ICT Ministries and Telecommunication Regulatory Authorities, member organizations of the Partnership on Measuring ICT for Development and academia.

77. Mr Barbosa then presented a report on the preliminary results of the expert group, based on the inputs received online until the time of the meeting. Concerning the revisions of existing core indicators, some of the most debated issues were whether to keep household access to radio and TV (HH1 and HH2) as core indicators, and how to revise the definition of household access to computers to take into account other devices with similar functionalities. Concerning proposals for new indicators, the most popular discussion items were measuring online content creation, social interaction and civic participation, and measuring ICT expenditure, with several countries having reported that they already measure these aspects of the information society. Among the cross-cutting issues most discussed online were the need to shorten the reference period of the access indicators, the need to extend the age brackets of the in-scope population to account for children, the need to improve the reporting on the urban and rural breakdowns, the need to set a reference period for the working condition of ICT devices and the need to distinguish between the concepts of ownership and availability of ICTs.

78. The NIC/CETIC presentation also included suggestions and comments to the EGH discussions from the Brazilian experience. Brazil has a long experience in measuring ICTs through household surveys, starting from 2005 and with sustained efforts to update and revise the indicators. As an example, Brazil was one the first countries to extended the age of the in-scope population for its household surveys in 2009, with a view to account for children aged between 5 and 9. The work was carried out with the help of a cognitive test developed by specialized psychologists in collaboration with the European Union. Another example of revision was the extension of the list of activities carried out over the Internet, currently counting more than 30 activities and including content creation, social media sites and activities such as downloading songs. The presentation also showcased the Brazilian experience on the measurement of some of the newly proposed indicators on barriers to Internet usage and on household expenditure on Internet access. The process of production and revision of ICT statistics in Brazil involves an

active collaboration between the government, academia and non-profit organisations, as well as several international organisations. This process was particularly effective in the design of the kids online survey, which involved several Brazilian universities, UNICEF, UNESCO and the Brazilian Ministry of Justice.

79. The second presentation was delivered by **Sang-Ho Jie** of the Korea Internet and Security Agency (KISA) who shared the experience of the Republic of Korea in measuring ICT in households as an input to the discussions of the EGH. The presentation highlighted the importance of reviewing the ICT indicators in line with the evolution of the technology and patterns of use. In the Republic of Korea, the age of the in-scope population was revised several times, first in 2002 to include children from the age of 6 and then in 2006 to include children from the age of 3. The presentation also covered Internet activities, with 9 separate categories currently measured, including the more-recently added ones on file sharing and software download, with data cross-classified by age-groups. One of the highlights of the data collection results was the high proportion of children between 10 and 20 who used the Internet for e-learning activities. In terms of frequency of Internet use, it was found that almost everyone used the Internet at least once per week. The average time spent online by a Korean was 55.4 hours per week, with men spending more time online than women. KISA measures barriers to Internet use since 1999 and the presentation showed that lack of interest was more recurrent in recent times than lack of skills. In addition to barriers to Internet use, KISA also measures complaints received from Internet users (aged at least 12) related to aspects such as spam, or infringement of personal privacy. Other recently-added or modified indicators are related to: capturing the use of ICT devices such as smart phones and smartpads; perception questions on Internet-induced problems such as leakage of personal information or abusive online behavior; and social commerce-related questions. The presentation ended by confirming the involvement of many different stakeholders in the review of ICT indicators in Korea, including the industry, the academia and the government. In spite of efforts to maintain the data collection up to date, KISA showed that it was faced with some challenges when conducting its surveys due to the difficulty of reaching out to people who are increasingly concerned with privacy.

80. The third and final presentation was delivered by **Sureerat Santipaporn** of the Thai National Statistical Office (NSO), covering Thailand's experience in measuring ICT in households, as an input to the EGH discussions. The presentation showed that Thailand accorded great importance to measuring household access and individual use to ICTs and therefore the NSO has been collecting household ICT statistics since 2001. Given the long experience, several updates were necessary to keep up with technological change. The presentation discussed measurement aspects such as household access to radio and TV, access to Internet by speed (with most household connections at speeds below 256 kbps), age scope (with a recommendation to extend the coverage to include children from the age of 6), Internet activities, location of Internet use (with the place of education featuring high in the country) and frequency of use and time spent online (with once a week being the most frequently reported answer in the Thai survey results). Regarding the measurement of the differences in access within the country,

since there is no internationally-agreed upon definition of urban and rural areas, Thailand measures the proportion of households with Internet access by region and by province.

81. India and Egypt intervened from the floor to thank the presenters for the richness of information delivered and to provide a summary of their inputs to the EGH online forum. The discussions following the presentations were brief in view of time constraints and it was agreed that further questions, answers and comments would be best addressed through the online discussion forum of the EGH. In concluding, the Chair of the EGH encouraged all participants to join the forum and express their views on the review of core ICT household indicators.

## Session 8: Gender and ICT indicators

82. The session on Gender and ICT indicators was moderated by **Lina V. Castro** from the National Statistical Coordination Board of the Philippines. Ms Castro introduced the session by highlighting the growing focus on gender policies and subsequent demand for gender and ICT statistics. She provided an overview of the work of the UN Statistical Commission, the UN Inter-Agency Expert Group on Gender Statistics, as well as of the Philippines, to address gender-relevant ICT indicators and stressed the criteria for including indicators, which should be relevant to the empowerment of women, be conceptionally clear and based on an agreed international definition and have been regularly compiled by countries to allow for international comparisons.

83. The first presentation was given by **Nancy Hafkin** of Women in Global Science and Technology (WISAT). She provided an overview of the different kinds of gender statistics and their importance for policy making. ICT and gender statistics identify differential access to, use of and impact of ICTs by sex and provide an insight into the use of ICTs for economic and social development. Moreover, they provide substantiated evidence on the intensity of the gender digital divide. She stressed that without data there is no visibility and without visibility there is no (policy) priority. She emphasized that an overall increase in ICT penetration does not guarantee equitable access and thus it is important to look at the gender perspective. ICT policies are often regarded as a technical issue and less as a social and economic concern and thus few ICT policies reflect gender concerns. But while ICTs are important enablers for building national knowledge societies, they are not gender neutral. Ms Hafkin acknowledged that a lot of progress has been made with regards to the collection of gender statistics, in particular since 2003, and that gender statistics are included in ITU questionnaires as well as the Partnership's core list of ICT indicators. She pointed out that data gaps remain in particular with regards to female Internet users and that data are not available for many developing countries, including China and India. She provided a brief overview of the Framework on Gender Equality in the Knowledge Society (GEKS), a data analysis framework for policy makers to identify economic and society sectors strategically significant to women’s full participation in knowledge societies.

84. Ms Hafkins then presented a way forward to develop new gender and ICT indicators for ITU and its member states. Gender-specific indicators in stand-alone national ICT surveys could include: gender-awareness in ICT/telecommunications policies, gender issues in technical ICT policy areas, policy encouragement for girls to study science and technology, women's share of leading positions in the ICT industry and government positions in science and ICT, women's participation in telecommunications and ICT decision-making. Furthermore new indicators for household and individual ICT access and use could include: mobile ownership (handset and/or SIM card) as well as questions on whether girls/women have equal access to all the ICTs in the home. She called upon ITU to assume a leadership role in raising all member states awareness of the importance of gender statistics, to encourage reporting of statistics and to get different policy groups into dialogue. Member states should ensure coordination between different entities involved and ensure gender-awareness in all ICT statistics. Ms Hafkin emphasized that gender statistics have to be mainstreamed in national ICT statistics, that gender advocates must become knowledgeable about ICT, science and technology and that ICT gender statistics have to be seen in the context of overall gender equality.

85. The second presentation, delivered by **Sonia N. Jorge** of Pyramid Research, focused on the sources of gender statistics and proposed new indicators on gender and ICTs. Ms Jorge reiterated that gender indicators provide an important insight into ICTs for economic and social development and help policy makers develop informed and gender relevant policies and programs. She pointed out that despite recent efforts to raise awareness of the need for gender and ICT indicators no systematic or coordinated collection of data at national or international levels exists. Few exceptions exists and she pointed to Brazil as a country that has collected detailed ICT and gender indicators as well as to the Partnership's core list of indicators by gender. She pointed to the need for better coordination among national and international entities and a stronger link between policy goals and data collection. Ms Jorge identified varying sources of data, definition of indicators and methodologies as the main challenges for data collection and international comparability. The experiences of countries such as Brazil, Republic of Korea, Thailand and South Africa demonstrates, however, that with commitment from stakeholders, it is possible to gather reliable gender indicators at the national level.

86. Ms Jorge identified ICT service providers, NSOs and research centers, industry research as well as market research and analysis firms as reliable sources of data that should play a more prominent role in the provision of gender and ICT indicators. In particular, she pointed to the SIM card registration process as a unique opportunity for operators to collect sex-disaggregated data. For new gender and ICT indicators to be collected she proposed to focus on subscription and ownership, such as: household access to ICT and breakdown of persons in households by gender, ownership of computer by gender, type of mobile device owned by gender etc., as well as focus on differentiated use such as: SMS use/adoption by gender, reasons for Internet use by gender, location of Internet access/use by gender, average price paid for Internet access by gender. In her recommendations on the way forward, she suggested to strengthen the work of the ITU on gender and ICT indicators, including: to continue to coordinate efforts at the national,

regional and international levels; work in cooperation with the Partnership; develop new gender indicators and encourage their collection by member states; provide training at the national and regional level; and promote the use of common guidelines and research standards in order to increase quality and reliability of data. Furthermore, gender analysts as well as statistics experts should be engaged in the development and definition of gender and ICT indicators.

**87.** The third presentation was given by **Nidhi Tandon** of Networked Intelligence focusing on aspects of employment and education. Ms Tandon highlighted two international definitions on ICT and employment by the OECD and the ILO. The OECD definition of ICT-skilled employment is rather broad in the sense that it does not only include ICT-specialist occupations but also ICT-using occupations, with statistics showing that the share of women in the latter is quite high. Many women are incorporating ICTs in their jobs even if they are not ICT specialists. The ILO definition on the other hand is focused on ICT specialists which risks excluding women who are not necessarily specialist, but do integrate ICTs in their work. Ms Tandon called on the ITU to collaborate with ILO and OECD to promote the production of gender specific employment data. She provided examples of ICT and education indicators that should be collected, including: proportion of learners (by gender) enrolled at the post-secondary non-tertiary and tertiary levels in ICT-related fields, proportion of learners (by gender) who graduated in ICT-related fields at the post-secondary non-tertiary and tertiary levels, and the number of female graduates per 1000 male graduates in ICT-related fields. She also presented the recently launched ITU Girls in ICT portal, a one-stop shopping center for girls to find out about opportunities in ICT. Ms Tandon further provided suggestions to ITU for potential collaborations in the field of ICT and gender statistics. The Evidence and Data for Gender Equality (EDGE) led by UN Women and the UN Statistics Division aims to improve and harmonize gender data with a first focus on women's education, employment and entrepreneurship. She further stressed that we measure what we value and thus our tools of measurement are deeply in favour of further rewarding what we already do. For example, many measurements (such as earning power, company performance) are merely economic and do not necessarily capture the whole picture. According to Ms Tandon, a quantum leap, a cognitive shift in thinking on how we can reconfigure the way we think to get all women involved, is needed. For the way forward she suggested to keep reviewing ICT occupations classifications as the sector is dynamic with new needs and professions emerging as new technologies and markets develop and to consider measurements for education that go beyond entry level and high school to include returnees to school, mentoring programs as well as internship and training at work.

**88.** The round of questions from the floor was opened by UNCTAD which announced that it had received funding from the Swedish government for enhancing the Partnership work on gender and ICT statistics, in collaboration with other relevant agencies. Egypt informed that they collect gender and ICT statistics with regards to education and capacity building which reveals a high proportion of women in capacity building programs. Egypt directed a question to Ms Jorge enquiring about further elaboration on how ICT and gender statistics can help set policies to promote the participation of women in national development. A second question was addressed

to Ms Tandon on the feasibility of having a separate, ICT and gender related survey. Concerning the question on how statistics inform policy, Ms Jorge pointed to two examples of projects that she has worked with in the Dominican Republic and South Africa, where the analysis of gender statistics had helped to address specific gaps and issues to be addressed when designing programmes and policies. She further commented on the feasibility of having a separate survey on ICTs and gender by saying a first starting point would be to have sex-disaggregated data.

89. Brazil congratulated all speakers and pointed out that its first female president has put a priority on gender and ICTs. He also pointed out that while quantitative data are very important, they need to be supplemented by qualitative data. In Brazil, qualitative studies have focused in particular on ICT and education and ICT and health. Ms Hafkin responded by stressing the importance of having both quantitative as well as qualitative data and underlining the explanatory power of qualitative studies.

**90.** The delegate of Lebanon asked whether information was available about the gap of the number of women educated in ICT-related fields and the number of women working afterwards in ICT-related fields, as there is a significant gap in Lebanon, as well as in other countries, between the two. Ms Hafkin responded by pointing to studies that show that it is a common phenomenon that many ICT-educated women disappear from the labour force after having finished their studies. She pointed to social factors such as family responsibilities, the lack of national policies and the realities of the division of work by sex. Ms Tandon further answered the question posed by Lebanon by adding that the corporate world is very male dominated and women often feel alien.

91. Botswana inquired about taking broadcasting and radio statistics into account in addition to computer and mobile. Thailand pointed to the changes that have been taking place in the last 20 years and explained that in Thailand more and more women are working in science and engineering. The delegate of the United Arab Emirates recalled the mandate of ITU on strengthening gender equity in the ICT sector and pointed to the different ITU initiatives in this regard. Furthermore, he underlined that his country was very interested in the topic and that the level of education of women in the country was very high with more female than male graduates. In view of the customs in the Arab region, however, many female graduates do not continue their careers, but rather stay at home.

92. The moderator concluded by underlining that ICT and gender statistics are critical to understanding the digital divide and to better inform policy makers and other stakeholders. ITU and the Partnership have done important work on the topic by identifying a set of core indicators on gender and ICTs, but more needs to be done to develop relevant indicators, including both administrative as well as household survey-based indicators. The goal was to mainstream ICT and gender statistics into ICT statistics and ITU should assume a leadership role in promoting this. Further, she called on ITU and the Partnership to develop additional gender relevant indicators.

## Session 9: Conclusions and recommendations

93. During the concluding session, the Chair of WTIM, **Jirawan Boonperm, Permanent Secretary of MICT, Thailand**, presented the draft conclusions and recommendations of the meeting. During the debate, delegates provided constructive comments on various parts of the text. The Annex to this report presents the final version of the conclusions and recommendations as agreed by the meeting.

94. The discussion of the Chair's conclusions and recommendations was followed by the closing ceremony. The Chair of WTIM, **Jirawan Boonperm, Permanent Secretary of MICT, Thailand**, thanked ITU for having invited her to chair the meeting. This was a particularly important experience since it marked the retirement from her career as government official. Ms Boonperm thanked all the speakers and moderators for their useful presentations and the delegates for their active participation. In particular, she applauded the work of ITU and the Expert Group on Telecommunication/ICT Indicators for having prepared such an excellent content of the meeting and wished everyone a successful symposium in 2013.

95. In his closing remarks, **Brahima Sanou, Director of the ITU Telecommunication Development Bureau**, thanked the Thai Government for hosting the event and the Chair for the excellent conduct of the meeting. Referring to Ms Boonperm's forthcoming retirement, ending with such a successful symposium was a great achievement. In line with the concept of granting "Freedom of the City" status, he offered her on behalf of all participants "Freedom of WTIS" and looked forward to her continued participation and contribution. He then invited those who were not yet part of the online discussions to subscribe to the two Expert Groups to ensure that the methodologies and indicators take into account different levels of development of countries. Finally, he thanked the panellists, speakers, participants, interpreters, support staff and ITU staff for having made this event possible and encouraged all to continue to innovate and raise this Symposium to the higher levels.

# 10TH WORLD TELECOMMUNICATION/ICT INDICATORS MEETING (WTIM)
## 25-27 September 2012
## Bangkok, Thailand

## Conclusions and recommendations

**Presented by the Chair**

1. The 10th World Telecommunication/ICT Indicators Meeting (WTIM) focused on the following topics: national coordination of ICT statistics; ICT infrastructure and access; revenue and investment; quality of service; data traffic; wireless broadband; digital broadcasting; the WSIS+10 review; e-commerce; ICT households access and individual ICT use; and gender and ICT indicators.

2. Participants agreed that the name of the meeting should be changed from World Telecommunication/ICT Indicators Meeting (WTIM) to World Telecommunication/ICT Indicators Symposium (WTIS), from next year onwards.

3. Based on the WTIM presentations and discussions, the following conclusions and recommendations are made.

**1. National coordination of ICT statistics**

4. Due to the cross-cutting nature of ICTs, there are a number of actors involved in the monitoring and collection of statistics and indicators, including ICT Ministries, telecommunication regulatory authorities and national statistical offices (NSOs). This requires coordination and cooperation among national data producers and users and the meeting welcomes the steps taken by ITU to create a high-level segment in the WTIM.

5. The meeting recognizes the importance of national coordination of ICT statistics to ensure the efficient and timely production of high-quality official statistics. To this end, it recommends that countries put in place a coordination mechanism which brings together national stakeholders to discuss issues related to the collection, dissemination and analysis of ICT statistics.

6. The meeting considered different models of national coordination of ICT statistics. Participants agree that the NSO should play an active role in coordinating the collection and dissemination of ICT statistics and indicators. The meeting emphasizes the need to include ICT statistics in the National Strategy for the Development of Statistics (NSDS). In this context, the importance of providing a legal basis for the national coordination of statistics is emphasized. Similarly, ICT measurement should be part of any national ICT strategy.

7. The meeting highlights the importance of continuing the discussion on the topic of national coordination using international forums, such as the WTIM and regional forums, such as the ESCAP Committee on Statistics. This could include the sharing of country experiences and best practices related to the coordination of ICT statistics. ITU should facilitate this process and develop guidelines and models for coordination mechanism that could be considered by countries.

**2. ICT infrastructure and access: EGTI results**

8. The meeting recognizes the importance of the Expert Group on Telecommunication/ICT Indicators (EGTI) as a unique forum for discussing indicators and methodologies related to ICT data and statistics. The meeting encourages all producers of infrastructure and access indicators, including operators and service providers, to participate actively in the work of the EGTI by sharing their experiences and technical expertise.

9. The meeting acknowledges the excellent work of the EGTI, under the chairmanship of Iñigo Herguera from Spain, in revising telecommunication/ICT indicators. The meeting endorses the outcome of the EGTI meeting held on 23-24 September 2012 at the same venue and recommends that the mandate of the EGTI should continue in order to carry on discussions on outstanding issues, standing items, such as the ICT Development Index and new indicators proposed by the EGTI.

10. The meeting acknowledges the importance of collecting telecommunication investment and revenue data and emphasizes the importance of applying strictly the definition available in the ITU Handbook. Furthermore, the meeting recommends that countries should collect data for the entire ICT sector and ensure that classifications are in line with international standards, particularly ISIC Rev. 4. This should be addressed further in the EGTI forum.

11. To improve the availability, quality and international comparability of administrative data on telecommunication/ICT statistics, the meeting encourages countries to use the ITU Handbook as a basic reference document in national data collections.

12. The meeting acknowledges the difficulties in comparing quality of service indicators internationally, in particular data transmission speed. However, these indicators are very important from a customer perspective and should be collected by regulators at the national level and be made available publically.

**3. Measuring data traffic**

13. The presentations highlighted the need to measure Internet data traffic given the growing levels of connectivity, devices and data services. While mobile-broadband traffic is below fixed-broadband traffic, it is the main source of growth in Internet traffic.

14. Operators are moving towards monitoring data traffic at a more and more granular level. While this provides important insights into Internet usage, the meeting recognizes the importance of

aggregating data at the national level to allow for international comparison. This comparison is an important contribution to benchmarking ICT uptake and usage and can complement subscription-based data.

15. Following the recommendations by the EGTI, the meeting agrees to include in the 2013 ITU data collection indicators on fixed (wired)-broadband Internet traffic, mobile-broadband Internet traffic (within the country) and mobile-broadband Internet traffic (roaming out), using the definitions agreed by the EGTI.

16. The meeting welcomes the ITU pilot project to collect indicators to measure backbone terrestrial transmission capacity. These include transmission network length (route kms), node locations, equipment type of terrestrial transmission network, network capacity (bit rate), number of optical fibres within the cable, operational status of the transmission network, and population within reach of transmission networks. The data, which will be collected by ITU through an external consultant, will be shared with and verified by national authorities. The aim of the project is to meet the demand for transmission capacity data and to develop an interactive online transmission map.

## 4. Wireless broadband

17. Measuring wireless broadband is necessary as it has become an important Internet access technology. The measurement of wireless broadband faces several challenges with regards to the definition, which includes mobile broadband, terrestrial fixed wireless and satellite technologies. Countries are encouraged to use the ITU definition and methodology for the collection of wireless broadband indicators as agreed by the EGTI and included in the ITU Handbook.

18. In view of the rapid growth in mobile-broadband subscriptions globally, monitoring the price and affordability of mobile-broadband services becomes essential. The meeting agrees to the revisions proposed to the methodology to collect mobile-broadband prices, as agreed by the 9th WTIM. Mobile-broadband prices will be included in the 2012 ITU Price basket questionnaire and in the calculation of the 2013 ICT Price Basket. The mobile-broadband price basket will include both handset-based and computer-based services and measure the affordability of low-volume usage.

## 5. Digital broadcasting

19. Digital broadcasting is a new and emerging service for many countries and its measurement requires the establishment of new indicators and definitions. The presentations highlighted that the scope of indicators to measure digital broadcasting still has to be defined and data have to be sourced from a number of different providers. Furthermore, distributers offering content beyond traditional broadcasting over the Internet, such as online video distributers (OVD), might play an increasingly important role in the future and have to be measured separately.

20. The meeting endorses the revision of digital broadcasting indicators currently included in the ITU Handbook. In addition, new indicators on services such as IPTV should be defined and measured. To this end, the meeting proposes a number of indicators on IPTV and recommends that the EGTI should include those in the online discussion forum and report the outcome of the discussions in the next WTIS.

## 6. WSIS+10

21. The meeting acknowledges the Partnership on Measuring ICT for Development's continued efforts to track global information society developments. It welcomes the Partnership's contribution to the WSIS+10 review and the assessment of the WSIS outcomes. In this context, it calls upon countries to use the Partnership's statistical framework document "Measuring the WSIS targets" to collect data on the indicators that will be required to monitor progress.

22. The meeting welcomes the Partnerships planned metadata survey on the WSIS targets, which will be sent to countries in 2012. The survey will help to take stock of data availability and countries are encouraged to participate actively. Furthermore, countries are encouraged to start collecting the data necessary to report on the WSIS outcomes by 2014. Such data will be collected by the Partnership in 2013, to prepare the final quantitative assessment report for WSIS+10.

23. Measuring ICT in education is an important area highlighted by the WSIS. The meeting acknowledges the progress made by the UNESCO Institute for Statistics (UIS) in this regard. Countries are encouraged to collect and disseminate data on ICT in education, following the methodologies developed by UIS and the Partnership on Measuring ICT for Development, in particular with respect to data necessary for the WSIS assessment.

## 7. Measuring e-commerce

24. The meeting acknowledges the scarcity of official statistical data on e-commerce and recognizes the growing importance of e-commerce data for ICT policy makers. At the same time, it notes that currently governments rely primarily on private sector information that is not necessarily comprehensive or methodologically in line with official statistical principles or definitions. The Partnership indicators on e-commerce are available only for a limited number of developing countries and refer only to online purchases and sales carried out by households or enterprises. Alternative sources of data such as the international postal system are very promising and should be explored further.

25. The meeting considers it essential to measure the value of e-commerce as well as emerging trends such as mobile commerce and collective buying, or barriers to e-commerce such as cybercrime. Some countries consider it important to capture the part of e-commerce in domestic sales, exports and imports, as well as the outsourcing of certain services that might also be considered e-commerce.

26. To this end, the meeting requests the Partnership on Measuring ICT for Development to advance the measurement of e-commerce by expanding the current core indicators and helping to build the capacity of countries for producing e-commerce statistics. New indicators on the value of e-commerce, for example, will also require the development of statistical methodology for their collection and countries will need to be trained. Furthermore the working definition of e-commerce needs to be revised in order to address the trends mentioned above.

## 8. Measuring ICT access and use through household surveys

27. The meeting welcomes the creation in May 2012, of the new ITU Expert Group on ICT Household Indicators (EGH), following the recommendation of the last WTIM. The objective of the EGH, which is chaired by Alexandre Barbosa from Brazil, is to revise the core ICT indicators on household access to, and individual use of, ICTs and the corresponding ITU Manual. Experts in the area of ICT household statistics are invited to join the EGH online discussion forum and provide inputs and share experience with regard to the core ICT household indicators.

28. The meeting recommends that the EGH includes in its discussion new indicators on Internet usage, such as frequency of use, activities carried out online, and barriers to using ICTs. Both the preliminary report from the EGH Chair, and the presentations of country experiences from Brazil, Republic of Korea and Thailand confirmed the need to continue measuring ICTs through household surveys, as well as the need for constant review, including by adding new indicators.

29. The meeting also encourages data collectors to consider extending the age scope of the survey in-scope population to include information on the activities, time spent online and frequency of Internet use for youth and children.

## 9. Gender and ICT indicators

30. From the presentations and discussions, it becomes clear that the measurement of ICT and gender is critical to understanding information society developments and the digital divide, and to identifying career opportunities for girls and women in ICT-related fields. They are also important to inform ICT policy makers, analysts and other stakeholders.

31. The meeting acknowledges the important work carried out by ITU and the Partnership on Measuring ICT for Development in terms of identifying a core set of ICT indicators, including indicators on the use of ICTs by gender and on ICT in education by gender.

32. More needs to be done to develop relevant gender and ICT indicators, in particular in terms of household ICT indicators, indicators based on operators' data, ICT in education, ICT employment and ICT skills. Participants emphasized the importance to distinguish between sex-disaggregated statistics and gender-sensitive statistics. Gender statistics should be mainstreamed into national ICT statistical data collections.

33. The meeting requests that the work of ITU on measuring gender and ICT should be strengthened. ITU should assume leadership in raising awareness among policy makers and work closely with

countries to increase data availability. ITU, in cooperation with members of the Partnership on Measuring ICT for Development, should continue to work on improving the measurement of gender and ICT, including by developing additional gender-relevant indicators and methodologies. The work of other relevant international groups, such as the UN Inter-Agency Expert Group on Gender Statistics, should be taken into consideration.