



5th World Telecommunication / ICT Indicators Meeting (Geneva, 2006)

Information Documents – Part V

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INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION
DEVELOPMENT BUREAU**

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TITLE: Draft key indicators of the telecommunication/ICT sector

Draft key indicators of the telecommunication/ICT sector

13 October 2006

The fifth World Telecommunication/ICT indicators meeting (Geneva, October 2006) proposes the following key indicators and definitions. Please address any questions or comments to indicators@itu.int.

	ITU code ¹	Indicator	Definition	Comments
FIXED TELEPHONE NETWORK				
1	112	Main (fixed) telephone lines in operation	A main line is a telephone line connecting the subscriber's terminal equipment to the public switched network and which has a dedicated port in the telephone exchange equipment. This term is synonymous with the term <i>main station</i> or <i>Direct Exchange Line (DEL)</i> that are commonly used in telecommunication documents. It may not be the same as an access line or a subscriber. Some countries include the number of ISDN channels; if so, this should be specified in a note. Fixed wireless subscribers should also be included.	<ul style="list-style-type: none"> Does this include the entire fixed market or just incumbent operator? Add indicators to show level of competition (for example, total number of lines by alternative operator) The number of the ISDN lines is provided separately [18, 18.1-18.3], for the sake of comparison this definition should be more explicit, for example, that the ISDN channels is always included. <p>NGN: In an NGN environment the connecting switch is replaced by a media gateway where all type of lines are connected (Copper lines for telephony, FTTH ...etc) to access different types of services. Therefore we suggest a global indicator dealing with the total number of main accesses (all types of connections) and split this indicator to sub-indicators for each type of main access. We should then define each main access.</p>
2	117	Total capacity of local public switching exchanges	The total capacity of public switching exchanges corresponds to the maximum number of main lines that can be connected. This number includes, therefore, main lines already connected and main lines available for future connection, including those used for the technical operation of the exchange (test numbers). The measure should be the actual capacity of the system rather than the theoretical potential when the system is upgraded or if compression technology is employed.	<p>NGN: As said for the 112 indicator, in an NGN environment, the public switch is replaced by the media gateway. The latter has a total capacity in terms of what we may call main accesses (all types of accesses).</p>

¹ Code used by the International Telecommunication Union (ITU) to identify the indicator. This code appears in ITU questionnaires.

	ITU code ¹	Indicator	Definition	Comments
3	1142	Percent of main (fixed) lines connected to digital exchanges	This percentage is obtained by dividing the number of main lines connected to digital telephone exchanges by the total number of main lines. This indicator does not measure the percentage of exchanges which are digital, the percentage of inter-exchange lines which are digital or the percentage of digital network termination points. Respondents should indicate whether the main lines included in the definition represent only those in operation or the total capacity.	<ul style="list-style-type: none"> Add another sub-indicator: the percentage of main convergent lines; that is main lines connected to the GSM network outside the premises and connected to the fixed PSTN via WIFI network within the premises <p>NGN: <i>New Indicator:</i> Percent of main (fixed) accesses connected to media gateways</p> <p>Same remark as above. In an NGN environment we can compute the percentage of each type of main accesses connected relating to the total capacity of the media gateway. This percentage is obtained by dividing the number of main accesses connected to the media gateway by the total capacity of the media gateway.</p> <p>We can add another sub-indicator that is: the percentage of main convergent lines; that is main lines connected to the GSM network outside the premises and connected to the fixed PSTN via WIFI network within the premises.</p>
4	116	Percent of main (fixed) lines which are residential	This percentage is obtained by dividing the number of main lines serving households (i.e., lines which are not used for business, government or other professional purposes or as public telephone stations) by the total number of main lines. Respondents should indicate the definition of households that is being applied.	<p>NGN: <i>New indicator:</i> Percent of main (fixed) accesses which are residential</p> <p>In an NGN environment we may compute the percentage of main accesses that are residential, that is the percentage of main accesses used for residential usage. This percentage is obtained by dividing the number of main accesses serving households (i.e., accesses which are not used for business, government or other professional purposes including SOHO or as public telephone stations) by the total number of main accesses.</p>
5	1162	Percent of main (fixed) lines in urban areas	This percentage is obtained by dividing the number of main lines in urban areas by the total number of main lines in the country. The definition of urban used by the country should be supplied.	<p>NGN: <i>New indicator:</i> Percent of main (fixed) accesses in urban areas</p> <p>In an NGN environment the same indicator should be used; we replace lines by accesses.</p>
6	1163	Number of localities with telephone service	Localities are cities, towns and villages in a country. This indicator reflects the number of localities that have telephone service. To enhance usefulness, the total number of localities should be provided as well as the population of localities covered by telephone service.	<p>NGN: <i>New indicator:</i> Number of localities with an NGN services access</p> <p>In an NGN environment we may compute the number of localities with an NGN services access. Localities are cities, towns and villages in a country. To enhance usefulness, the total number of localities should be provided as well as the population of localities covered by telephone service.</p>

	ITU code ¹	Indicator	Definition	Comments
7	1112	Public payphones	Total number of all types of public telephones, including coin and card operated and public telephones in call offices. Publicly available phones installed in private places should also be included, as should mobile public telephones. All public telephones regardless of capability (e.g., local calls or national only) should be counted. If the national definition of "payphone" differs from that above (e.g., by excluding pay phones in private places) then respondents should indicate their own definition.	NGN: <i>New indicator:</i> Public telecommunications pay-services In an NGN environment, public payphones may be used in the future also for multimedia or other services supported by NGN. This service is not likely to be offered in the near future. It is not then a relevant indicator for the time being given the deployment of NGN networks as of today.
MOBILE NETWORK				
8	271	Mobile cellular telephone subscribers (post-paid + prepaid)	Refers to users of portable telephones subscribing to an automatic public mobile telephone service that provides access to the Public Switched Telephone Network (PSTN) using cellular technology. This can include analogue and digital cellular systems but should not include non-cellular systems. This should also include subscribers to IMT-2000 (3G) high-speed mobile networks (i271G). Subscribers to public mobile data services or radio paging services should not be included. If this service has a name, please indicate in a note as well as the year the service commenced operation.	<ul style="list-style-type: none"> It should be further specified that this is total number of all kind of mobile subscribers (for example, 2G, 3G, digital, analogue, etc.) Add: This should also include subscribers to IMT-2000 (3G) high-speed mobile network (i271G). Collect 'active subscribers' (see prepaid subscribers: 271p)
8.1	271p	Mobile cellular subscribers: prepaid subscribers	Total number of mobile cellular subscribers using prepaid cards. These are subscribers that rather than paying a fixed monthly subscription fee, choose to purchase blocks of usage time. Only active prepaid subscribers that have used the system within a reasonable period of time should be included. This period (e.g., 3 months) should be indicated in a note.	<ul style="list-style-type: none"> Delete the second "subscribers" Active user – pre-paid: all prepaid subscribers that have used at least one payable service in last 90 days with their SIM card
9	2712	Digital mobile cellular subscribers	Total number of subscribers to digital cellular systems (e.g., GSM, D/AMPS (TDMA), CDMA). Should include both post-paid and pre-paid subscribers. 2712 = 271h + 271G	<ul style="list-style-type: none">
9.1	271L	Total number of subscribers to low and medium speed mobile networks	Sum of low and medium speed mobile subscribers (2G and 2.5G).	

	ITU code ¹	Indicator	Definition	Comments
9.2	271G	Number of subscribers to IMT-2000 (3G) high-speed mobile networks	<p>Number of subscribers to IMT-2000 (3G) high-speed mobile networks (e.g., CDMA2000 1X, WCDMA, CDMA2000 1xEV-DO, etc.) regardless of whether they are using multimedia services, though with capacity for data communications, via Internet. In this context, "high-speed mobile" implies a speed that is equal to, or greater than, 144 kbit/s in at least one direction.</p> <p>-Code Division Multiple Access (CDMA) 2000 1x is an IMT-2000 3G mobile network technology, based on CDMA, that delivers packet switched data transmission speeds of up to 144 kbps.</p> <p>-Wideband CDMA (W-CDMA) is an IMT-2000 3G mobile network technology, based on CDMA, that presently delivers packet switched data transmission speeds up to 384 kbps and up to 2 Mbps when fully implemented. Known as <i>Universal Mobile Telecommunications System</i> (UMTS) in Europe.</p> <p>-CDMA2000 1xEV-DO is an IMT-2000 3G mobile network technology, based on CDMA, that delivers packet switched data transmission speeds of up to 2.4 Mbps.</p> <p>-Enhanced Data rates for GSM Evolution (EDGE) is an intermediate technology that brings second-generation GSM closer to third-generation capacity for handling data speeds up to 384 kbits/s.</p>	<ul style="list-style-type: none"> • Mobile broadband: define as 256kbps (same as fixed line) • Move low-speed services out of this category and move it to 271L • Collect different individual technologies of 3G and then put layers (definitions) on it. • Measure % of population covered by 3G • Measure connections
10	271land	Percent coverage of mobile cellular network (land area)	Mobile cellular coverage of the land area in percent. This is calculated by dividing the land area covered by a mobile cellular signal by the total land area.	<ul style="list-style-type: none"> • Coverage varies across networks/operators. It should be specified whether the coverage of the operator with the largest coverage or an average one should be provided here.
11	271pop	Percent coverage of mobile cellular network (population)	Mobile cellular coverage of population in percent. This indicator measures the percentage of inhabitants that are within range of a mobile cellular signal whether or not they are subscribers. This is calculated by dividing the number of inhabitants within range of a mobile cellular signal by the total population. Note that this is not the same as the mobile subscription density or penetration.	<ul style="list-style-type: none"> • Coverage varies across networks/operators. It should be specified whether the coverage of the operator with the largest coverage or an average one should be provided here.
TEXT/DATA NETWORK				
12	311	Telex subscriber lines	A telex subscriber line is a line connecting the subscriber's terminal equipment to the public telex network and which has a dedicated port in the telex exchange equipment.	
13	4213	Total Internet subscribers	<p>4213 = 4213tb + 4213d + 4213l</p> <p>The number of total Internet subscribers includes dial-up, public leased lines and broadband subscribers. Only active subscribers should be included.</p>	<ul style="list-style-type: none"> • The number of total Internet subscribers includes dial-up, public leased lines and broadband subscribers. Only active subscribers should be included. • What is the proposed definition for an "active subscriber"? • It might be appropriate to include a parameter like '4213hs' (High Speed; for non-dialup access, albeit below '256 kbps' speed) or else, such figures would fall beyond the count of just DSL, cable and others (considering the minimum threshold of '256 kbps') and in any case, cannot be counted within the dial-up.

	ITU code ¹	Indicator	Definition	Comments
13.1	4213d	Dial-up Internet subscribers	Number of Dial-up Internet subscribers. Dial-up is a connection to the Internet via a modem and telephone line, which requires that the modem dial a phone number when Internet access is needed. Dial-up modem speeds are generally limited to speeds of 28 kbit/s to 56 kbit/s.	
13.2	4213tb	Total broadband Internet subscribers	4213tb = 4213cab+4213dsl+4213ob Total broadband Internet subscribers refers to a subscriber who pays for high-speed access to the public Internet (a TCP/IP connection). High-speed access is defined as being equal to, or greater than 256 kbit/s, as the sum of the capacity in both directions. If countries use a different definition of broadband, this should be indicated in a note. The statistic is measured irrespective of the type of access, or the type of device used to access the Internet, or the method of payment.	<ul style="list-style-type: none"> Bulgaria applies the definition of the EU project for Monitoring the SEE countries: high-speed access is defined as being equal to, or greater than 144 kbit/s
13.2.1	4213cab	Cable modem Internet subscribers	Internet subscribers using modems attached to cable television networks. Speed should be equal to, or greater than 256 kbits, as the sum of the capacity in both directions.	
13.2.2	4213dsl	DSL Internet subscribers	Internet subscribers using Digital Subscriber Line (DSL) technology. DSL is a technology for bringing high-bandwidth information to homes and small businesses over ordinary copper telephone lines. Speed should be equal to, or greater than 256 kbits, as the sum of the capacity in both directions.	
13.2.3	4213ob	Other broadband Internet subscribers	Internet subscribers using other than DSL and cable modem. This includes technologies such as mobile cellular technologies, Satellite broadband Internet, Fibre-to-the-home Internet access, Ethernet LANs etc.	Fibre to home is a recognized dsl technology and should be under the indicator 4213dsl
13.3	4213l	Leased line Internet subscribers	Number of leased line Internet subscribers.	
14	4212	Estimated Internet users	The estimated number of Internet users. A growing number of countries are measuring this through regular surveys. Surveys usually indicate a percentage of the population for a certain age group (e.g., 15-74 years old). The total number of Internet users in this age group should be supplied and not the percentage of Internet users in this age group multiplied by the entire population. In situations where surveys are not available, an estimate can be derived based on the number of subscribers. The methodology used should be supplied, including reference to the frequency of use (e.g., in the last month).	
14.1	4212f	Percent female Internet users	Share of females in the total number of Internet users. This is calculated by dividing the number of female Internet users by the total number of Internet users and multiplied by 100.	
14.2	4212f%f	Female Internet users as percent of female population	Share of female Internet users in the total number of females. This is calculated by dividing the number of female Internet users by the total number of females and multiplied by 100.	
15	424	PWLAN locations	The number of <i>Public Wireless Local Area Network</i> (PWLAN) locations (i.e., <i>hotspots</i>). PWLANs are based on the IEEE 802.1b standard, commonly referred to as WiFi.	
16	28	ISDN subscribers	The number of subscribers to the Integrated Services Digital Network (ISDN). This can be separated by basic rate interface service (i.e., 2B+D, ITU-T Rec. I.420) and primary rate.	

	ITU code ¹	Indicator	Definition	Comments
16.1	281	Basic rate ISDN subscribers	The number of subscribers to the basic rate interface service.	
16.2	282	Primary rate ISDN subscribers	The number of subscribers to the primary rate interface service.	
16.3	28c	ISDN voice channel equivalents	B-channel equivalents converts the number of ISDN subscriber lines into their equivalent voice channels, and is the sum of basic and primary rate equivalents. The number of basic rate subscribers is multiplied by two and the number of primary rate subscribers is multiplied by 23 or 30 depending on the standard implemented.	<ul style="list-style-type: none"> The D channel is used sometimes for specific purposes (for telemetry for instance) when the signaling tasks are fulfilled. We might apply the same principle for counting the D channels.
17	4214	International Internet bandwidth	Total capacity of international Internet bandwidth in Mega Bits Per Second (Mbps). If capacity is asymmetric (i.e., more incoming than outgoing), provide incoming capacity.	<ul style="list-style-type: none"> Total capacity of International Internet Bandwidth = Sum of Internet Bandwidth from all ISPs, Telecom Operators, Research and Educational Networks that connect to international providers
17.1	4214og	Outgoing	Total outgoing capacity of international Internet bandwidth in Mega Bits Per Second.	
17.2	4214ic	Incoming	Total incoming capacity of international Internet bandwidth in Mega Bits Per Second.	
QUALITY OF SERVICE				
18	123	Waiting list for main lines	Un-met applications for connection to the Public Switched Telephone Network (PSTN) due to a lack of technical facilities (equipment, lines, etc.). The waitlist should reflect the total number across all PSTN service providers in the country.	<p>Average of waiting time</p> <p>NGN: <i>New indicator:</i> Waiting list for main accesses (any type)</p> <p>In an NGN environment we might consider the following indicator: Un-met applications for access to the NGN due to a lack of technical facilities (equipment, links, etc.). The waitlist should reflect the total number across all NGN service providers in the country.</p>
19	143	Faults per 100 main lines per year	The total number of reported faults to main telephone lines for the year. Faults, which are not the direct responsibility of the public telecommunications operator, should be excluded. This is calculated by dividing the total number of reported telephone faults <i>for the year</i> by the total number of main lines in operation and multiplied by 100. The number of faults per 100 main lines per year should reflect the total across all PSTN service providers in the country.	<p>NGN: <i>New indicator:</i> Faults per 100 main accesses per year</p> <p>In an NGN environment we might consider the total number of reported faults to main accesses for the year. Faults, which are not the direct responsibility of the public telecommunications operator, should be excluded. This is calculated by dividing the total number of reported faults for the year relating to all types of accesses by the total number of main accesses in operation and multiplied by 100. The number of faults per 100 main accesses per year should reflect the total across all NGN service operators in the country. We might consider also a QOS sub indicator for each type access.</p>
20	141	Percent of telephone faults cleared by next working day	Percentage of PSTN faults reported that have been corrected by the end of the next working day. (i.e., not including non-working days (e.g., weekends, holidays)). The percent of telephone faults cleared by next working day should reflect the total number across all PSTN service providers in the country.	<p>NGN: <i>New indicator:</i> Percent of faults cleared by next working day</p> <p>In an NGN environment we might consider the percentage of faults relating to all types of accesses reported that have been corrected by the end of the next working day. (i.e., not including non-working days (e.g., weekends, holidays)). The percent of faults cleared by next working day should reflect the total number across all NGN operators in the country.</p>

	ITU code ¹	Indicator	Definition	Comments
TRAFFIC				What is the periodicity of traffic indicator? (Minutes/ month...minutes/year...etc.)
21	1311m	Local telephone traffic (minutes)	Local telephone traffic consists of effective (completed) fixed telephone line traffic exchanged within the local charging area in which the calling station is situated. This is the area within which one subscriber can call another on payment of the local charge (if applicable). This indicator should be reported in the number of minutes.	<ul style="list-style-type: none"> Would be useful to have split between calls within an RCU within a local switch and calls that need to travel to another switch within the same charging zone
22	1312m	National trunk telephone traffic (minutes)	National trunk (toll) traffic consists of effective (completed) fixed national telephone traffic exchanged with a station outside the local charging area of the calling station. The indicator should be reported as the number of minutes of traffic.	<ul style="list-style-type: none"> National trunk as an aggregated sum may not be useful when you may also have regional calls
22.1	1313wm	National fixed to mobile traffic (minutes)	Total outgoing minutes from the national fixed network to the mobile cellular network within the territory.	<ul style="list-style-type: none"> What is the definition of fixed here? Does it exclude nomadic services?
22.2	1311im	Internet Dial-up traffic (minutes)	The total volume in minutes of dial-up sessions over the public switched telephone network to access the Internet.	<ul style="list-style-type: none"> Do we need to split between PSTN dial-up and ISDN?
23	133wm	Outgoing mobile minutes	Total number of minutes made by mobile subscribers (including minutes to fixed and minutes to other mobile subscribers).	<ul style="list-style-type: none"> Definition is not clear enough - it should be specified that only national traffic is provided here? What is the definition of mobile subscriber? Split btw pre and postpaid would be good. Also active subscriber.
23.1	1331wm	Outgoing/originating mobile minutes to same mobile network	Number of minutes made by mobile subscribers to the same mobile network.	<ul style="list-style-type: none"> Typically what is called on-net calls. May be a large skew towards off-peak calls which may be free, so a breakdown would be useful
23.2	1332wmf	Outgoing mobile minutes to fixed networks	Number of outgoing minutes made by mobile subscribers to fixed networks.	<ul style="list-style-type: none"> What is the definition of fixed network – is this derived from the national numbering plan?
23.3	1332wm	Outgoing/originating mobile minutes to other mobile networks	Number of minutes made by mobile subscribers to other mobile networks.	<ul style="list-style-type: none"> Definition is not clear enough – what is the definition of a mobile network? Is a MVNO a mobile network? Would be useful to have break down of traffic between mobile infrastructure operators and MVNOs.
24	132mb	International incoming and outgoing fixed telephone traffic (minutes)	Sum of international incoming and outgoing fixed traffic (i132m+i132mi).	
24.1	132m	International outgoing fixed telephone traffic (minutes)	This covers the effective (completed) fixed traffic originating in a given country to destinations outside that country. The indicator should be reported in number of minutes of traffic.	<ul style="list-style-type: none"> Does this include non PST traffic? What are the destination of calls and percentage of traffic via VoIP?
24.2	132mi	International incoming fixed telephone traffic (minutes)	Effective (completed) fixed traffic originating outside the country with a destination inside the country. The indicator should be reported in number of minutes of traffic.	<ul style="list-style-type: none"> Identify incoming calls and would be useful to have an indication of percentage of traffic over VoIP.
25		Public data traffic (non-Internet)	Traffic from public data services such as X.25 and frame-relay (but excluding Internet) measured in megabytes per second (Mbytes).	<ul style="list-style-type: none"> What <u>are</u> public data services??
26.1	1333wm	Outgoing/originating mobile minutes to international	Number of mobile minutes originating in a country to destinations outside that country.	<ul style="list-style-type: none"> What destination?
26.2	1334wm	Roaming minutes (outside home network)	Total number of roaming minutes made by own mobile subscribers to make and receive calls when outside the country (outside home network), e.g., when traveling abroad.	<ul style="list-style-type: none"> Making and receiving calls has different charges – a split would be good

	ITU code¹	Indicator	Definition	Comments
26.3	1336wm	Roaming minutes in visited network (foreign subscribers)	Total number of minutes made by visiting (foreign) subscribers when making and receiving calls in visited network.	<ul style="list-style-type: none"> Making and receiving calls has different charges – a split would be good
26.4	1335wm	Incoming international minutes to mobile network	Number of incoming minutes (fixed and mobile) received by mobile networks from another country.	What destination?
26.5	133sms	SMS sent	Total number of mobile Short Message Service (SMS) sent.	Split by network? Where does blackberry stand? This is not captured.
26.6	133mms	MMS sent	Total number of mobile Multimedia Messaging Service (MMS) sent.	Split by network. Where does blackberry stand? This is not captured
26.7	133rm	Number of countries with which there is a roaming agreement.	Total number of countries, with which there is a roaming agreement. If there are several operators with a different number of roaming agreements, the operator with the highest number of roaming agreements should be selected.	<ul style="list-style-type: none"> Problem: If operator "A" has agreements with country "1", "2", "3", "4", and "5" whereas operator "B" has agreements with country "1", "6", and "7". The total number of countries with which there is a roaming agreement should not be 5 referring to the operation with the highest number of roaming agreements. It should be 7. What is the purpose of this indicator?
27	132tb	International incoming and outgoing total telephone traffic (minutes)	Sum of international incoming and outgoing fixed and mobile traffic (i132m+i132mi).	<ul style="list-style-type: none">
27.1	132t	International outgoing total telephone traffic (minutes)	This covers the effective (completed) fixed and mobile traffic originating in a given country to destinations outside that country. The indicator should be reported in number of minutes of traffic.	
27.2	132ti	International incoming total telephone traffic (minutes)	Effective (completed) fixed and mobile traffic originating outside the country with a destination inside the country. The indicator should be reported in number of minutes of traffic.	

	ITU code ¹	Indicator	Definition	Comments
28	132vp	VoIP	Definition not yet available. To be discussed: indicators to reflect rise in VoIP	<ul style="list-style-type: none"> There is a need to define other terms related to IP such TV over IP, taking into consideration that the definition should not limit the technology of transmission (fixed/mobile) or speed or quality of service. ITU failed to define VoIP so this is not a recognized technology/application and MEF should not attempt to define it. PC to PC data exchange is not VoIP; it only refers to international use. Study Group 2 needs to be consulted. VoIP traffic using any of the following protocols – RTP, skype, eDonkey, etc. Should be split between PC-PC, PC to PSTN, PSTN to PC and PSTN to PSTN using VoIP. France collects data on VoIP: activated 'full service' clients (<u>subscriber numbers</u>, as part of a multi-play offer), <u>volume</u> (outgoing, in minutes), and <u>revenues</u> (from subscribers to the VoIP service) Possible definition: A telephony service where the voice traffic is carried using IP over a broadband connection from the subscriber's equipment to the VoIP provider's IP network or to the public Internet. <p>Possible Measures of VoIP:</p> <ul style="list-style-type: none"> <u>Subscribers numbers</u> for full service offerings: subscribers sign up and <u>pay</u> a monthly fee for a certain amount of free minutes But Soft client services subscribers (many download the software but they do not use it. Or many only use for on net calls . Skype Q4 2005 earnings.) are difficult to measure. Minutes and revenue would be useful (outgoing minutes to same network, minutes to othe VoIP networks, minutes to PSTN etc). Tariff charges (usually based on monthly fees with per-minute charges for international destinations) but this is very complex Services. By looking at the type of services that VoIP offers, it may be possible to measure its impact/growth/success.

TARIFFS

Because most countries now have some form of competition in at least one market segment, there may not be a standard tariff. In addition, tariffs within services may not be uniform (e.g., telephone subscription charges may vary across the nation). The following guidelines may be useful. It is preferable to use the tariffs of the operator with the largest market share (measured by subscribers). It is preferable to use the tariffs that the majority of consumers pay (e.g., if most of the customers are in urban areas, use urban tariffs). It is preferable to include taxes and provide a note specifying whether taxes are included and what the rate is. It is preferable to use the same operator each year to enhance chronological comparability. It is preferable to report tariffs in national currency. If this is not the case, the currency has to be specified in a note.

			Fixed local telephone service tariffs –residential	<ul style="list-style-type: none"> Why is indicator on “National telephone call prices” deleted?
29.1.1	151	Installation fee for residential telephone service	Installation (or connection) refers to the one-off charge involved in applying for residential basic telephone service. Where there are different charges for different exchange areas, the charge for the largest urban area should be used and specified in a note.	

	ITU code ¹	Indicator	Definition	Comments
29.1.2	152	Monthly subscription for residential telephone service	Monthly subscription refers to the recurring fixed charge for subscribing to the PSTN. The charge should cover the rental of the line but not the rental of the terminal (e.g., telephone set) where the terminal equipment market is liberalized. Separate charges should be stated where appropriate, for first and subsequent lines. If the rental charge includes any allowance for free or reduced rate call units, this should be indicated. If there are different charges for different exchange areas, the largest urban area should be used and specified in a note.	1. Inclusive allowance of call units should relate to contract duration 2. Ensure full rental not promotional price 3. Take nearest contract to 12-months 4. Use price before reductions •
29.1.3	153	Price of a 3-minute fixed telephone local call (peak rate)	Local call refers to the cost of a peak rate 3-minute call within the same exchange area using the subscriber's own terminal (i.e., not from a public telephone).	1. Ensure Local call excludes reduced toll 2. Express to 4 decimal places 3. Note if merged local/ national rate
29.1.4	153o	Price of a 3-minute fixed telephone local call (off-peak rate)	Local call refers to the cost of an off-peak rate 3-minute call within the same exchange area using the subscriber's own terminal (i.e., not from a public telephone).	
			Fixed local telephone service tariffs -business	
29.2.1	151b	Installation fee for business telephone service	Installation (or connection) refers to the one-off charge involved in applying for business basic telephone service. Where there are different charges for different exchange areas, the charge for the largest urban area should be used and specified in a note.	
29.2.2	152b	Monthly subscription for business telephone service	Monthly subscription refers to the recurring fixed charge for subscribing to the PSTN. The charge should cover the rental of the line but not the rental of the terminal (e.g., telephone set) where the terminal equipment market is liberalized. Separate charges should be stated where appropriate, for first and subsequent lines. If the rental charge includes any allowance for free or reduced rate call units, this should be indicated. If there are different charges for different exchange areas, the largest urban area should be used and specified in a note.	
30	153tm	International telephone call prices	This is the cost of a fixed 3-minute directly dialed (i.e., without operator intervention) call originating within the country to another country. The rate should be supplied for peak rate time calls and off-peak (discount) rate calls (if applicable). The cost should be reported in national currency, with a statement on what taxes are applied. International tariffs to all countries should be provided.	• Note these are base prices – often there are additional discounts for larger enterprises/ higher expenditure

	ITU code ¹	Indicator	Definition	Comments
Mobile cellular tariffs Because most countries now have some form of competition in at least one market segment, there may not be a standard tariff. In addition, tariffs within services may not be uniform (e.g., telephone subscription charges may vary across the nation). The following guidelines may be useful: It is preferable to use the tariffs of the operator with the largest market share (measured by subscribers). It is preferable to use the tariffs that the majority of consumers pay (e.g., if most of the customers are prepaid subscribers, prepaid tariffs should be used). It is preferable to include taxes and provide a note specifying whether taxes are included and what the rate is. It is preferable to use the same operator each year to enhance chronological comparability. It is preferable to report tariffs in national currency. If this is not the case, it should be specified in a note. The note should further specify which operator and which tariff plan was used.				<ul style="list-style-type: none"> Due to the variety of tariffs and plans available on the market it is almost impossible to provide accurate data. With regard to the mobile cellular tariffs CRC (Bulgaria) benchmark and analysis is based on the OECD basket for digital mobile services, which reflect the price of one or the two most prominent operators in each OECD country, based on the number of subscribers The results of the baskets represent the monthly average cost of a low, medium and high user of mobile services. The same methodology is used in the EU Implementation reports and the SEE Monitoring project.
31.1.1	151c	Mobile cellular connection charge	The initial, one-time charge for a new subscription. Refundable deposits should not be counted. Although some operators waive the connection charge, this does not include the cost of the Subscriber Identify Module (SIM) card. The price of the SIM card should be included in the connection charge. A note should indicate whether taxes are included (preferred) or not.	
31.1.2	152c	Mobile cellular monthly subscription	The monthly subscription charge for mobile cellular service. Due to the variety of plans available in many countries, it is preferable to use the tariff with the cheapest initiation/connection charge. If prepaid services are used (for those countries that have more prepaid than postpaid subscribers), the monthly subscription charge would be zero. If the plan includes free minutes, this should be put in a note. A note should indicate whether taxes are included (preferred) or not and what the rate is.	<ul style="list-style-type: none"> Some low-end post-paid plans have no rental but a minimum usage per month
31.1.3	153c	Mobile cellular - price of 3 minute local call (peak)	The price of a <u>three</u> minute peak rate local call from a mobile cellular telephone. If operators charge different prices depending on who is being called (e.g., same mobile network, fixed network, another mobile network) these should be listed separately. In order to enhance inter-country comparability it is preferable to use pre-paid tariffs. A note should indicate whether taxes are included (preferred) or not.	<ul style="list-style-type: none"> Usage charge needs to include set-up charge where applicable Price plans are flat rate in many countries Include call to other fixed network as option
31.1.4	153co	Mobile cellular - price of 3 minute local call (off-peak)	The price of a three minute off-peak rate local call from a mobile cellular telephone. If operators charge different prices depending on who is being called (e.g., same mobile network, fixed network, another mobile network) these should be listed separately. In order to enhance inter-country comparability it is preferable to use pre-paid tariffs. A note should indicate whether taxes are included (preferred) or not.	
31.1.5	153sms	Mobile cellular – price of SMS	Price of sending a national Short Message Service (SMS) message from a mobile handset.	1.Specify SMS to other networks (increasingly free on-net, also charge to foreign networks) 2.Be clear residential not business plans 3.Suggest introducing MMS charge – trend to one price regardless of message size
31.1.6	151pcard	Mobile cellular – cheapest recharge card value	Refers to the cheapest available prepaid recharge card.	

	ITU code ¹	Indicator	Definition	Comments
31.2	153m	Average mobile termination charge	Operators inside a country add a mobile termination charge to all calls completed to wireless devices within their country. The charge amount varies by country and applies to all calls that are placed to wireless devices.	
Other data tariffs				
32	153l	Private leased line charge (2 Mbit/s)	Connection charge and monthly rental charge for 2 Mbit/s private leased line.	1. Separate section for 34Mbps 2. Specify as national specific distance suggest 3km or 25km 3. Leave out international 4. Specify in notes whether or not local end charges are included.
Internet tariffs				
Connection, monthly rental and usage charges for Internet access service. It is preferable to use the tariffs of the ISP with the largest market share (measured by subscribers). The tariff chosen for a particular country would be the package with the cheapest/lowest minimum monthly charge, that is widely available (or, in the case of regional service providers, is available in the capital city) and is available to the general public without restriction (e.g., excluding in-company or limited time offers, and excluding offers that are bundled with some other service). If additional charges are payable for telephone usage for dial-up use, this and the amount, preferably by minute, should be specified in a note. A note should indicate whether the subscription includes free hours and/or is flat-rate.				<ul style="list-style-type: none"> It is hard to estimate the operator with biggest market share. Difficulties also come from the variety of Internet packages with different prices according to the speed rate, type of access (unlimited access (flat rate) or time offers). The monthly rental and usage charges depend much on the speed rates, so the definitions should be more precise.
Dial-up Internet tariffs For a dial-up Internet connection, a telephone call charge may apply while connected. The telephone call charge refers to the amount payable to the telephone company for local telephone charges while connected to the ISP. This maybe similar to local call charges (indicators 153 and 153o) above, if not provide the cost applicable. Both peak and off-peak telephone call charge should be provided.				<ul style="list-style-type: none"> The incumbent operator offers two types of free dial-up access: for subscribers of a standard telephone line and for ISDN subscribers - should both prices be provided? There is also a free dial-up offer (only the minutes used are paid) - should it be the cheapest tariff?
33.1	4213c	Dial-up Internet connection charge	The initial, one-time charge for a new dial-up internet connection. Refundable deposits should not be counted. A note should indicate whether taxes are included (preferred) or not.	
33.2	4213s	Dial-up Internet monthly subscription	The monthly subscription charge for dial-up internet service. A note should indicate whether taxes are included (preferred) or not. The note should also specify the amount of free monthly hours included if applicable.	
33.3	4213p	Dial-up Internet - price of per minute (peak) connection	Cost of per minute (peak) connection once the free Internet hours included in the dial-up subscription is used up. A note should indicate whether taxes are included (preferred) or not.	
33.4	4213po	Dial-up Internet - price of per minute (off-peak) connection	Cost of per minute (off-peak) connection once the free Internet hours included in the dial-up subscription is used up. A note should indicate whether taxes are included (preferred) or not.	
33.5	4213_t20	Internet access tariff (20 hours per month)	This indicator refers to the lowest price for 20 hours of dial-up Internet usage per month. It includes the tariff components of monthly line rental, line usage charge and Internet access charge, plus any tax that may be levied (as this is a service used by both residential and business consumers). The tariff chosen for a particular country would be the package for 20 hours per month that is the cheapest, that is widely available (or, in the case of regional service providers, is available in the capital city) and is available to the general public without restriction (e.g., excluding in-company or limited time offers, and excluding offers that are bundled with some other service).	

	ITU code ¹	Indicator	Definition	Comments
Broadband Internet tariffs				
34.1	4213bc	Broadband Internet connection charge	The initial, one-time charge for a new broadband internet connection. Refundable deposits should not be counted. A note should indicate whether taxes are included (preferred) or not.	1. Standardise on downlink speeds suggest 512 kbit/s and 2 Mbit/s 2. Optional: Note uplink speed
34.2	4213bs	Broadband Internet monthly subscription	The monthly subscription charge for broadband internet service. A note should indicate whether taxes are included (preferred) or not.	1. Standardise on downlink speeds: 512 kbit/s & 2 Mbit/s 2. Note whether broadband rental is exclusive ADSL access or shared with phone line 3. Make sure have total rental for Internet access and IP traffic transport. 4. Be careful rental for VOIP service isn't included. If bundled in – mention in notes. 5. Remove TV access portion. If bundled in – mention in notes. 6. Optional: Note uplink speed. 7. Optional: Note usage limit/ price/ MB after exceeding
STAFF				
35	51	Total full-time telecommunication staff	Total full-time staff employed by telecommunication network operators in the country for the provision of public telecommunication services, including mobile services. Part-time staff should be expressed in terms of full-time staff equivalents.	<ul style="list-style-type: none"> Does this include ISP staff? We need definitions for 'ICT workforce' but there are many problems and no international standards Statistical definitions have not been able to keep up with the changes in the work force Update of ISCO might help to develop a definition (completion by end 2007, with thematic view) Does this include all (for example clerical workers) staff even if they are not directly involved in the ICT-related activity of the operator? We need to measure the <u>impact</u> of ICT on workforce. But it is difficult to measure the larger impact (job where ICT skills are required even if it is not directly in the ICT sector) The term 'professional' needs to be defined but this is difficult (it is not clear what skills exactly are needed by professionals)
35.1	51f	Female telecommunication staff	The number of full time telecommunication staff that are female.	<ul style="list-style-type: none"> How do you define full time? Changing the definition could make it more difficult to collect but the way it is, it leaves many open questions
35.2	51fp	Female professional telecommunication staff	The number of full-time professional staff that are female. Professional staff are those included in ISCO-88 group XX (To check ISCO88)	
36.1	51w	Mobile communications staff	Total number of staff employed by mobile cellular network operators. This refers to mobile operators building infrastructure and not staff employed by resellers.	
36.2	51wf	Female mobile communications staff	Total number of female staff employed by mobile cellular network operators. This refers to mobile operators building infrastructure and not staff employed by resellers.	
36.3	51wfp	Female professional mobile communications staff	Total number of professional female staff employed by mobile cellular network operators. This refers to mobile operators building infrastructure and not staff employed by resellers. Professional staff are those included in ISCO-88 group.	

	ITU code ¹	Indicator	Definition	Comments
REVENUE				<ul style="list-style-type: none"> What about revenues generated from fixed to mobile calls?
37	75	Total revenue from all telecommunication services	This is the total (gross) telecommunication revenue earned from all (fixed, mobile and data) services within the country. This should exclude revenues from non-telecommunications services. Revenue (turnover) consists of telecommunication service earnings during the financial year under review. Revenue should not include monies received in respect of revenue earned during previous financial years, neither does it include monies received by way of loans from governments, or external investors, nor monies received from repayable subscribers' contributions or deposits. Revenues should be net of royalties.	<ul style="list-style-type: none"> Break in comparability: with new definition new segments are included: leased lines, Internet, cable, satellite.
37.1	71	Revenue from fixed telephone service	Revenue received from fixed telephone connection, subscription and calls.	
37.1.1	711	Revenue from fixed telephone connection charges	Revenue received for connection (installation) of fixed telephone service. This may include charges for transfer or cessation of service.	
37.1.2	712	Revenue from fixed telephone subscription charges	Revenues from recurring charges for subscription to the PSTN including equipment rentals where relevant.	
37.1.3	713	Revenue from fixed telephone calls	The sum of income from local, national long distance and international calls. $713 = 7131 + 7132 + 7133$.	
37.1.3.1	7131	Revenue from local calls	Revenue from fixed local calls based on applicable retail charges on users.	
37.1.3.2	7132	Revenue from national long distance calls	Revenue from fixed national long distance calls based on applicable retail charges on users.	
37.1.3.3	7133	Revenue from international calls	Revenue from fixed international calls based on applicable retail charges on users.	
37.2	741	Revenue from mobile communications	Revenues from the provision of all types of mobile communications services such as cellular, private trunked radio and radio paging.	<ul style="list-style-type: none"> 3G ARPU not reported separately ARPU – voice / data Traffic – voice / data
37.3	741d	Mobile data revenues	Revenues from mobile data services such as text messaging (SMS), high-speed network access, WAP use, etc.	
37.4	741m	Text and multimedia messaging revenues	Revenues from text messaging (e.g., SMS) and from non-text messaging based mobile data services such as high-speed access charges and WAP use.	
37.5	731	Revenue from data services	Revenues from data services such as data communications (e.g., packet switching) and Internet access but not telegram or telex.	
37.6	7311	Revenue from Internet services	Revenue from internet service based on applicable retail charges on users.	
37.7	732	Revenue from leased lines	Revenue from the provision of leased lines.	
37.8	733	Revenue from fixed value-added telecommunication services	Represents the revenue generated by the telecommunication service sector for fixed value-added telecommunication services.	

	ITU code ¹	Indicator	Definition	Comments
37.9	74	Other revenues	Any other revenues not accounted for elsewhere for the provision of public telecommunication services. Responders should indicate in a note what are the main sources of "other" telecommunications revenues.	<ul style="list-style-type: none"> Profitability: ITU does not collect profitability EBITDA, EBIT : total assets, current liabilities ITU could provide metrics for affordability of investment (EBITDA, CAPEX) Return on capital employed: EBIT/Total assets-current liabilities
INVESTMENT				
38	81	Total annual investment in telecom	Also referred to as annual <i>capital expenditure</i> , this is the gross annual investment in telecom (including fixed, mobile and other services) for acquiring property and network. The term investment means the expenditure associated with acquiring the ownership of property (including intellectual and non-tangible property such as computer software) and plant. These include expenditure on initial installations and on additions to existing installations where the usage is expected to be over an extended period of time. Note that this applies to telecom services which are available to the public, and excludes investment in telecom software or equipment for private use.	<ul style="list-style-type: none"> Capex is defined to exclude 1-off licence purchase fees Share of Capex used for 3G is collected for those areas where the investment is dedicated to 3G, <ul style="list-style-type: none"> - eg. Node Bs, parts of core network Capex:sales is a useful additional metric <ul style="list-style-type: none"> - exclude 1-off exceptional revenue items - most useful on a rolling 12 month basis because of seasonality Capex:connection is easy to compute and is useful for more mature markets <ul style="list-style-type: none"> - where network expansion is not the dominant component
38.1	83	Fixed telephone service investment	Annual investment on equipment for fixed telephone service.	
38.2	841m	Mobile communication investment	Annual investment on equipment for mobile communication networks.	<ul style="list-style-type: none"> Does capex include licence fees? How is capex broken down? How much capex goes on 3G? How to separate 2G / 3G capex? Mix of radio network, core, service layer? 3G data needed Capex on the network
38.3	841f	Foreign investment	Annual investment in telecom coming from foreign sources, also referred to as Foreign Direct Investment (FDI).	
COMMUNITY ACCESS INDICATORS				
39	PIAC5	Total number of PIACs	Refers to the total number of Public Internet Access Centres (PIAC). A PIAC is a site, location, or centre of instruction at which Internet access is made available to the public, on a full-time or part-time basis. This may include telecentres, digital community centres, Internet cafés, libraries, education centres and other similar establishments, whenever they offer Internet access to the general public. All such centres should have at least one public computer for Internet access.	<ul style="list-style-type: none"> Venezuela's definition and ITU's definition of PIACs and DCC are compatible Difficulty of measuring PIACs since they are not registered Centers are not limited to Internet and the definition has to be broadened to take into consideration centers that do provide other ICT services, such as TV, radio etc
39.1	PIAC6	Total number of DCCs	Refers to the total number of a nation's Digital Community Centres (DCC). A DCC is a place where the public can access Internet services from terminal facilities placed at their disposal. A DCC is an undertaking based on a government framework for universal access. It should offer equitable, universal and affordable access. A DCC is a sub-category of a PIAC but there are some minimum requirements for a Public Internet Access Centre (PIAC) to be considered a DCC. Every DCC should have at least one computer and one printer and a minimum connection speed of 64 kbit/s per centre to the Internet Service Provider (ISP). DCC users should also be provided with support and maintenance and it should be opened a minimum of 20 hours per week.	<ul style="list-style-type: none"> DCCs easier to measure since they are linked to government but cybercafés (which are part of a PIACs) are difficult to measure

	ITU code ¹	Indicator	Definition	Comments
39.2	PIAC7	Total number of other PIACs	Refers to the total number of other Public Internet Access Centres (not PIACs and not DCCs). Other PIACs include cybercafés. Education Centres may be classified as a DCC or a PIAC, depending on the conditions they satisfy (see indicator 51 and 51.1)	
39.3	PIAC3	Number of localities with PIAC	Refers to all localities (a nation's villages, towns, and cities) that have at least one Public Internet Access Centre (PIAC). A PIAC is a site, location, or centre of instruction at which Internet access is made available to the public, on a full-time or part-time basis.	<ul style="list-style-type: none"> Problems of calculating community access points and the percentage of localities with PIAC because these are not registered: estimates are made What is a locality?
39.4	PIAC1	Percentage of localities with PIACs	A public Internet access centre (PIAC) is a site, location, centre of instruction at which Internet access is made available to the public, on a full-time or part-time basis. This may include telecentres, digital community centres, Internet cafés, libraries, education centres and other similar establishments, whenever they offer Internet access to the general public. All such centres should have at least one public computer for Internet access. Localities refer to a country's villages, towns and cities. The percentage of localities with public Internet access centres (PIACs) is computed by dividing the number of localities with at least one PIAC by the total number of the country's localities and multiplying by 100. The indicator should be broken down by range of inhabitants. This indicators will be used to measure the WSIS target "to connect villages with ICTs and establish community access points" by 2015.	
39.5	PIAC2	Percentage of the population with access to a PIAC	Measures the number of inhabitants enjoying PIAC coverage as a proportion of the country's total population. When a locality (village, town, city) has at least one PIAC then the entire population living in this locality is considered to be served by that PIAC.	
39.6	PIAC4	Target population for DCC services	Refers to the potential population (the potential population refers to anyone of age 6 years or more) minus the number of non-community Internet users (non-community Internet users are those citizens that have Internet access from a point different from a PIAC, for example at home).	
39.7	PIAC8	Total number of computers in DCCs	Refers to the total number of computers available in all Digital Community Centres. A DCC is a place where the public can access Internet services from terminal facilities placed at their disposal. See Indicator 51.1 for the definition of a DCC.	
39.8	PIAC9	Actual DCC usage percentage	To calculate the actual DCC usage percentage, countries should divide the actual number of DCC users by the DCC target population (see indicator 50 for definition) for DCC services and multiply by 100. A user is defined as a person who accesses the Internet at least once a month.	
OTHER INDICATORS				
40	955	Number of radio sets	The total number of radio sets. A radio set is a device capable of receiving broadcast radio signals, using popular frequencies, such as FM, AM, LW and SW. A radio set may be a standalone device, or it may be integrated into another device, such as a Walkman, a car, or an alarm clock.	

	ITU code¹	Indicator	Definition	Comments
41	965	Number of TV sets	The total number of television sets. A television set is a device capable of receiving broadcast television signals, using popular access means such as over-the-air, cable and satellite. A television set may be a standalone device, or it may be integrated into another device, such as a computer or a mobile phone. It may be useful to distinguish between digital and analogue signal delivery and between TV sets receiving only a limited number of signals (usually over-the-air) and those that have multiple channels available (e.g., by satellite or cable).	
42	965m	Total number of multi-channel TV subscribers	965m=965c+965s. This is the total number of multi-channel TV subscribers (both terrestrial and satellite).	
42.1	965c	Number of terrestrial multi-channel TV subscribers	Number of terrestrial multi-channel TV such as cable TV, digital terrestrial TV, Microwave Multi-point Distribution systems (MMDS) and Satellite Master Antenna Television (SMATV) subscribers.	
42.2	965s	Direct to Home satellite antenna subscribers	The number of subscribers to a home satellite antenna that can receive television broadcasting directly from satellites.	
43	965cp	Homes passed by multi-channel TV	Number of households that have a multi-channel (both terrestrial and satellite) television connection whether they are subscribing or not.	
44	422	Number of Personal Computers	The number of Personal Computers (PC) measures the number of computers installed in a country. The statistic includes PCs, laptops, notebooks etc, but excludes terminals connected to mainframe and mini-computers that are primarily intended for shared use, and devices such as smart-phones that have only some, but not all, of the functions of a PC (e.g., they may lack a full-sized keyboard, a large screen, an Internet connection, drives etc).	
General comments: The term subscriber should be replaced by subscription				



INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION
DEVELOPMENT BUREAU**

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5TH WORLD TELECOMMUNICATION/ICT INDICATORS MEETING, GENEVA, 11-13 OCTOBER 2006

FOR INFORMATION

SOURCE: MEF, ITU

TITLE: Key themes highlighted during the meeting

5th World Telecommunication/ICT Indicators Meeting
11-13 October 2006, Geneva, Switzerland

Key themes highlighted during the meeting

- 1. Highlights of the work of the MEF Unit**
- 2. Data collection – country best practices**
- 3. Definitions of Indicators**
- 4. Conclusions**

Conclusions

The fifth World Telecommunication/ICT Indicators Meeting—organized by the International Telecommunication Union (ITU)—took place in Geneva, Switzerland, from 11-13 October 2006.¹ There were 150 participants, including 69 women, from 67 countries. A total of 11 international organizations were represented. The meeting was chaired by Mr. R. Zouakia from ANRT (Morocco). The meeting's rapporteurs were Ms R. Joshi and C. Prado of MEF Unit in the BDT (ITU). The meeting was divided into twelve sessions.

The purpose of the meeting was primarily to focus on Definitions of the ICT indicators as collected by the MEF Unit. This theme was chosen so as to keep in mind the evolving trends in the telecom sector as well as to respond to the emergence of the need to capture trends in usage and access to ICT services. In the course of the agenda, on the first day, the participants had an overview of the work done by the MEF Unit. The meeting also sought to present to participant country best practices in data collection, methodology and dissemination.

to review the state of telecommunication/ICT statistics, definitions, collection, methodology and dissemination. The focus of the sixthth WTI Meeting was the discussion of definitions and recent indicators. Since the telecommunication/ICT sector has been changing rapidly over the recent years, the indicators to measure the telecommunication/ICT sector need to be adapted accordingly. The impressive growth and changes in the mobile sector, and with regard to broadband technologies, particularly, call for the revision of existing definitions. The meeting brought together entities responsible for telecommunication/ICT statistics and analysis, including telecommunication ministries, regulators and operators; national statistical offices (NSO); international organizations and researchers. Presentations were made on the following topics: ITU collection, processing, analysis and dissemination of data; country best practices on data collection; and definition of indicators. Since the focus of the meeting

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

was to revisit the ITU's indicator definitions, separate sessions were held on the following topics:

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

The opening and overview of the meeting put the statistical work of the ITU into a broader perspective. This is particularly important today in the light of the discussion on the information society. ITU is increasingly working with other international partners and organizations in an effort to help measure the information society and to identify and collect relevant indicators to help measure international, regional, and national ICT developments, and the digital divide. The important role that the ITU has in collecting and harmonizing data was highlighted. It was also noted that the input, comments, and expertise of ITU's members states and sector members is important to face the challenges posed by a changing technological environment **and to identify relevant and indicators.**

Overview of ITU's data collection, processing, analysis and dissemination

As the United Nations specialized agency for telecommunications, the ITU is responsible for producing statistics covering its sector. By means of an annual questionnaire the ITU collects data for around 100 indicators from more than 200 countries and territories. Data providers are mainly telecom ministries and regulatory authorities. The first presentation highlighted the reliance of the ITU on national entities (regulators and ministries) to collect ICT statistics. While the Market, Economics, and Finance Unit receives an increasing number of data requests (an expected 1'400 requests by email alone in 2006), the Unit continues to face a number of challenges, including the limited response rate to the questionnaire and non-response to some questions. MEF continues to publish its data in a number of formats, through regional and global reports, online, and on CD-ROM. ITU's Development Bureau recently launched a new application- the ICT Eye – which is a one stop-shop website for ICT information that provides some of the MEF's key World Telecommunication Indicators data, together with regulatory and policy profiles, national tariff policies, operator information, and financial and scientific institutions.

Cooperation in order to produce, disseminate and use more and better statistics, takes place in various forms, with different partners and at various stages of the data collection, gathering and dissemination process. Besides the WTI meeting, which is an important means of cooperating with member states and the private sector in order to develop a set of relevant indicators and definitions, MEF highlighted two important cooperation projects, the Millennium Development Goals (MDG) and the Partnership on Measuring ICT for Development. MEF is part of the MDG Expert Group and has been mandated to track target 18 (to make available the benefits on new technologies, particularly ICTs) of

Goal 8 (Develop a global partnership for development). With a view to monitoring this target 18, ITU provides three indicators that it collects: total telephone penetration, Internet penetration and PC penetration. Access to Information and Communication Technologies (ICT) has been growing, always exceeding global economic growth. Besides the global trends, the presentation further showed some of the regional results for the MDG indicators. It was also noted that there is today an increasing focus on “ICT for development”. Given the growing emphasis to go beyond measuring ICT developments and trends it is important to identify “impact” indicators to measure and monitor in which way ICTs are affecting the other MDGs, as well as social and economic development in general. MEF has contributed to this debate, primarily through the last World Telecommunication Development Report, which focused on ‘measuring ICT for social an Cooperation in order to produce, disseminate and use more and better statistics, takes place in various forms, with different partners and at various stages of the data collection, gathering and dissemination process. The Partnership has achieved one of its major objectives by developing a core list of 42 ICT indicators..

The Presentation of the ICT Opportunity Index focused on providing the rationale, mandate and the framework of the Index .the presentation developed the theme of understanding the components of the index as well as the results that came about and the speaker also brought out the need to revise the index in the light of developments in the telecommunication sector since 2003.

Telecom data collection – country best practice

The presentation made by Singapore’s Infocomm Development Authority (IDA) showed how Singapore uses its telecommunication/ICT statistics to monitor and analyse trends, to formulate new and review existing policies and to raise industry awareness and the general public’s understanding of developments and trends. Policies, for example, in the area of education and manpower are based on a set of administrative data and survey results. This includes the formulation of the “Intelligent Nation 2015 Masterplan” (iN2015), which has a clear set of ICT related objectives (see slide *Objective – Policy Formulation III*). Statistical information is also extensively used to analyse progress made in the area of the telecommunication sector itself. To evaluate the quality of services provided, IDA has carried out a number of surveys, including an e-Government Customer Perception survey. The ICT industry is dynamic and driven by rapid technological and market changes. Data collection efforts need to be reviewed and adapted to changing needs in order to be relevant to meet the needs of various stakeholders. To this end, IDA carries out period reviews and cooperated with other agencies and users.

A presentation made by a representative from Regulatel – the Latin American Forum for Regulatory Agencies - presented a project to collect, manage, and disseminate regional telecommunication statistics (SIRTEL). The project provides an interactive, online platform which allows member states to provide a set of statistics that the organisation has agreed on. The indicators and definitions collected through SIRTEL are largely identical to those collected through the ITU’s World Telecommunication Indicators questionnaire. These include traffic indicators, basic infrastructure indicators, revenue

and investment indicators, and tariff indicators. SIRTEL also collect data on Public Internet Access Centres (PIACs). Data are used to identify regional differences and carry out benchmarking. In the case of Mexico, which is one of the Regulatel members, ICT data are collected through the census, as well as through specific surveys. They are used – as in Singapore – to review policies, benchmark progress and to identify the importance of the telecommunication sector in the overall economy (which has been increasing). Special attention – through government projects - is paid to the provision of Public Internet Access Centres, which has allowed Mexico to substantially improve access to the internet to an increasingly large percentage of the population

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

As a rescheduled in the presentation made by Tanzania (Mr Juma HANGO, TCRA) , the focus was on the Tanzanian experience on data collection of ICT and telecommunication information. TCRA which is the nodal authority for the collection of data started I 2003 and is in charge of the collection of information and statistics form the operators. While the TCRA has adopted the ITU list of indicators, challenges are faced regarding the development of an effective and streamline data collection and survey system. Data regarding key statistics for Tanzania was also presented. The presenter requested ITU to provide for enhanced capacity building measures for data collection methodology, storage, processing and analysis of information.

ICT Sector Definition

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

objectives was to reflect the growing importance of "information" in the economy and in society. This includes the incorporation of a separate definition of the 'content and media' sector within the concept of the Information Economy

- Two main resolutions guide the statistical work of the ITU. The meeting is requested to look at the two resolutions and to update Resolution 131 to be submitted as input to PP2006 in November
 - Resolution 8 (Doha 2006)
 - Resolution 131 (PP2002)
- It was requested that a statistical contact (in MEF) be available not only for French, Spanish and English-speaking countries but also for Arabic, Chinese and Russian
- It was requested that an Arab Indicators Report be published
- ITU should continue collecting and publishing broadcasting statistics as ITU has the mandate to look at broadcasting infrastructure
- The Partnership will continue to improve the availability and quality of ICT statistics and will not endorse any index. The index work will be left to users of Partnership data.
- Digital divide indices – existence of two indices

DEFINITIONS OF INDICATORS

A number of presentations were made on the main focus of the present WTIM 2006, namely the issue of definitions and its harmonization.

The presentation on fixed definitions was made by Dr. Zouakia of the ANRT – wherein the key objective was to open the discussion on how indicators may change according to the new technologies as NGN is gradually being introduced both in developed and developing countries – there could be a basis for revisiting some of the definitions. A key idea that emerged is to create a global indicator based on "access" instead of lines.

In the presentation on mobile indicators, particularly 3G mobile indicators that was presented by Martin Garner of OVUM, the presentation dealt with the coverage of mobile connections and its implications for the definition of "active" subscribers. In addition, the key message was that indicators should make a distinction between connections and "people" who use services and it is possible that people may have multiple connections. There is increasingly a difficulty in defining territory as a concept given cross border implications. Greater liaison at the field level in understanding the scope of services is a positive way to build on the scope and refine indicator focus to the needs of the market. The discussions in this area centered on confidentiality issues, and the need for segregating capex related measures for 3G which could be captured as a distinct indicator.

Ms Mohar of APEK, Slovenia made the presentation on the definition of Prepaid subscriber including the difficulties in arriving at a common benchmark of an active subscriber. Usually operators counted all subscribers and the SIM cards sold. Further

some of the difficulties encountered is that there were no distinctions made whether the user was 2G, 2.5G, UMTS or GPRS subscriber. The overall definition of “active” subscriber was taken to mean – connected to the network in the past 90 days. A key point that emerged was that in Slovenia the ITU definitions have been sourced upon as a guide.

The discussions in the session on mobile indicators stressed on points such as wherever possible effective liaison on definitions of tariffs would be made in concert with study groups. In addition notions such as replacing “lines” by “access” still needs to be developed and understood in its true context

Session 6 covered –Revenue and Investment Indicators.

The presentation from ART, Senegal provided an overview of both data as well as information on revenue and investment indicators in Senegal. The focus was to stress on the confidentiality aspects of the information as well as the difficulties faced in receiving the information from operators. In addition ART Senegal is using the definition of the indicators of the ITU and an annual Report is published. The presentation also highlighted the success of the mobile and telecentres as important means of accelerating ICT usage in the country.

Ovum in its presentation of Investment indicators provided a brief background on the complexity of 3G investment indicators as an incremental layer in the CAPEX and thus the need to capture this element in a 3G specific investment indicator. The speaker also highlighted the difficulty in segregation of 2G and 3G investments. Different accounting systems of operators also made the estimation a difficult venture. In terms of recommendations, Ovum urged the ITU to look at market and investor driven indicators such as EBIDTA as well as indicators such as ROCE (Return of capital employed) as useful measure in the future.

Data network indicators

The presentations covered the country specific definitions of broadband as used in France as well as

ARCEP, France

ARCEP has 4 quarterly (on subscribers) surveys and one annual (volume) survey to operators

The disaggregated data can only be used for the purpose of transparency and to analyse the market. It cannot be used by ARCEP for regulatory purposes. Publication of data is aggregated. In the domain of multiplay – it is divided into services (so 3-play would be counted 3 times: once in each category).

ARCEP is facing a number of difficulties, for example the separation between Edge/UMTS. Also, operators are reluctant to provide data. It is expected that better data will be available over the next years and that the definition will evolve.

Point Topic

Dial up subscribers is an important indicator because it can help measure potential of broadband subscribers. The PointTopic Definition of broadband is compatible with that by ITU. Speed is becoming less important since most bb access is at least >256kbps.

Broadband and internet household data are important because of the inclusion of business lines in administrative counting/data. Total broadband lines is not equivalent to total broadband households.

Bandwidth – NECTEC

Definition of bandwidth is the same as that used by ITU. This is the sum of all international Internet connections. In addition, incoming and outgoing bandwidth are equal but previously incoming was somewhat larger so that that one is used as overall bandwidth (conform with ITU definition).

Collecting Internet bandwidth data requires a lot of human effort and collaborations.

VoIP, Point Topic

VoIP is growing fast: 5 million subscribers in 2004, mainly in Japan. Almost 20 million subscribers at the end of 2005. Because so much VoIP is software driven, there are constantly new services (video provision, or free calls to certain networks). The speaker highlights that minutes and revenue would be useful (outgoing minutes to same network, minutes to other VoIP networks, minutes to PSTN etc).

Tariff charges (usually based on monthly fees with per-minute charges for international destinations) but this is very complex.

Resume of definition: A telephony service where the voice traffic is carried using IP over a broadband connection from the subscriber's equipment to the VoIP provider's IP network to the public internet (implies that someone is paying).

Summary: subscribers of full-service VoIP can be measured but soft-client VoIP is very difficult to measure absolutely with out data on minutes.

ARCEP

Broadband services offered over VoIP as access services that are regulated and controlled by operators and from registered operators that provide VoIP.

ARCEP does not collect data from non-registered operators or service providers such as skype (pc to pc VoIP).

Comments

VoIP definition by ITU not been firmly established

A list of countries that allow VoIP should be drawn up so as to analyse definition issues.

VoIP used to be illegal mainly because the international long-distance providers did not want to allow it. Now the service is provided by the traditional operators as well as new entrants.

Singapore has definition and we have started collecting data but collecting volume is very difficult since there is a high number of operators offering this service. Also, the total number will always be underestimated since it reflects only Singapore's side of the use and not the international side.

Traffic indicators

A revision of the definitions was also presented; the comments are included in the revised list of indicators.

- What is the definition of mobile network – it should be good to disaggregate if it
- Desegregation or not of the tariffs – based on the commercial plans operators are providing to users.
- VoIP it will be useful to split between different type of services (pc –pc, pc-pstn, etc)
- Some countries are not sending the whole list of data requested, it should be good determine which type of specific problems they have?
- the accuracy of the information was also discussed, as some countries are sending information which is unverified.

Tariffs indicators

Background of the work of Tarifica was presented – the different services and types of tariffs that they collect (tariffs fixed, mobile, internet, internet content such as music, video, etc.) including broadband and leased lines. The presentation gave a broad list of the tariff compilation by Tarifica. Tariff definitions need to be revised in the light of market conditions. With focus on clarity in duration of contracts, nature of subscription, need of data collection agencies.

Remarks

Errors in definitions: definitions are revised by study groups composed by countries. All the tariffs definitions are revised by SG3 - National definition and international definition difference.

Tariffs indicators in the way they are defined now for operators, it is hard to represent some of the various tariffs plans they have. Proposed solution elaboration of a kind basket for some services aggregates. (Bulgaria)

The SG is working on recommendations and standard definitions. That could be useful as first data. BDT can share the information between the related SG.

Regarding national tariffs, it is important that MEF definitions are revised and improved as looking at the evolution of the telecom environment and market. Our objective is to have useful indicators for every body and comparable. (P.T.)

Staff and broadcasting indicators

This presentation was focused on occupations in information and communication technology. For employment, in the new ISCO 88 be revised. The occupations should be identified in line with the telecommunication sector of countries and enable countries to include the level of education and skills into the staff indicators.

Community access/ universal access indicators

A geographical background was presented try in to illustrate the community areas in the country – rural and remote areas and to facilitate the introduction of the action plan for the implementation of community access. This included the number of cybercafé in the country – including the rural areas.

In addition, the definition of “Locality” was not clear as presented by the statistical office, compared with the telecom objectives.

The presentation focuses on issues of geographical dispersion of remote communities which make it difficult to estimate.

Discussion

The terms professional should be defined for the staff indicators. “Is a group of occupation which requires extensive knowledge and very well know communication and technical skills (it is not necessary university).” ILO

The definition of community (Localidad) should be country specific.

In addition, the role that mobile plays in community access should be captured.