Table of contents

Table of contents	
ITU World Telecommunication/ICT indicators	3
Fixed telephone network	3
i112 Fixed-telephone subscriptions	
i116 Percentage of fixed-telephone subscriptions that are residential	
i112IP VoIP subscriptions	
i112pt Fixed-telephone numbers ported	4
Mobile cellular network	5
i271 Mobile-cellular telephone subscriptions, by postpaid/prepaid	
i271p Prepaid mobile-cellular telephone subscriptions	
i271m2m M2M mobile-network subscriptions	
i271pop Percentage of the population covered by a mobile-cellular network	
i271pt Mobile-cellular numbers ported	
Internet	
i4214u – International bandwidth usage, in Mbit/s	
i4214l – Lit/equipped international bandwidth capacity, in Mbit/s	
Fixed broadband by technology/speed	7
i4213tfbb Fixed-broadband subscriptions	
i4213tfb_o Fixed-broadband subscriptions for organizations	
i4213cab Cable modem Internet subscriptions	
i4213dsl DSL Internet subscriptions	8
i4213ftth/b Fibre-to-the-home/building Internet subscriptions	
i4213ob Other fixed (wired)-broadband subscriptions	
i271s Satellite broadband subscriptions	9
i271fw Terrestrial fixed wireless broadband subscriptions	10
i4213_256to2 256 kbit/s to less than 2 Mbit/s subscriptions	10
i4213_2to10 2 Mbit/s to less than 10 Mbit/s subscriptions	10
i4213_G10 Equal to or above 10 Mbit/s subscriptions	11
Mobile broadband	11
i271G Percentage of the population covered by at least a 3G mobile network	11
i271GA Percentage of the population covered by at least an LTE/WiMAX mobile network	
i271mw Active mobile-broadband subscriptions	
i271mb_active Data and voice mobile-broadband subscriptions	
i271md Data-only mobile-broadband subscriptions	
i271mwa Active subscriptions to LTE/WiMax mobile-broadband networks	
Bundled telecommunication services	13
i4213_2x Subscriptions to fixed-broadband and fixed-telephone bundles	
i4213_3x Subscriptions to fixed-broadband, fixed-telephone and pay-TV bundles	
Quality of service	
	· · · · - ·

i146u Mobile-cellular unsuccessful call ratio (%)	
i146d Mobile-cellular dropped call ratio (%)	14
i147t Service activation time for fixed-broadband service (in days)	
Traffic	15
i131m Domestic fixed-to-fixed telephone traffic, in minutes	15
i1313wm Fixed-to-mobile telephone traffic, in minutes	16
i132m International outgoing fixed-telephone traffic, in minutes	
i132mi International incoming fixed-telephone traffic, in minutes	16
i133wm Domestic mobile-telephone traffic, in minutes	
i1332wmf Outgoing mobile traffic to fixed networks, in minutes	
i1333wm Outgoing mobile traffic to international, in minutes	17
i1335wm Incoming international traffic to mobile network, in minutes	17
i133sms SMS sent	
i132t Total international outgoing telephone traffic, in minutes	
i132ti Total international incoming telephone traffic, in minutes	
i135tfb Fixed-broadband Internet traffic (exabytes)	19
i136mwi Mobile-broadband Internet traffic (within the country)	
i136mwo Mobile-broadband Internet traffic (outside the country, roaming out	:)19
Revenue (in local currency at current prices)	20
i75 Revenue from all telecommunication services	20
i741 Revenue from mobile networks	20
Investment (in local currency at current prices)	20
i81 Annual investment in telecommunication services	20
i841f Annual foreign investment in telecommunications	21
Persons employed	21
i51 Persons employed in full-time equivalents	
i51f Persons employed by all telecommunication operators, female	
Pay TV	22
i965IP IPTV subscriptions	22
i965s Satellite TV subscriptions	
i965cab Cable TV subscriptions	
i965oth Other TV subscriptions	

ITU World Telecommunication/ICT indicators

Fixed telephone network

i112 Fixed-telephone subscriptions

Definition

Fixed-telephone subscriptions refers to the sum of active number of analogue fixed-telephone lines, voice-over-IP (VoIP) subscriptions, fixed wireless local loop (WLL) subscriptions, ISDN voice-channel equivalents and fixed public payphones.

This indicator was previously called Main telephone lines in operation.

Clarifications and Scope

This indicator refers to all accesses over fixed infrastructure that provide voice telephony, including telephone lines using copper wire and voice services using IP delivered over fixed (wired)-broadband infrastructure, for example digital subscriber line (DSL), fibre optic and coaxial cable television networks (cable modem). It also includes fixed WLL connections, which are defined as services provided by licensed fixed-line telephone operators that provide last-mile access to the subscriber using radio technology (the call being subsequently routed over a fixed-line telephone network and not a mobile-cellular network). It includes both postpaid and prepaid subscriptions. If prepaid, the fixed-telephone subscription should be active, i.e. used at least once in the last three months. It should include data from all licensed fixed-telephone line providers. In the case of VoIP, it should include all operators that have been licensed to provide IP telephony, provided that the service includes a subscriber telephone number, allows the ability to place and receive calls at any time and does not require a computer. Both residential and business subscriptions should be included.

The indicator does not cover mobile-cellular telephony subscriptions, computer-mediated IP telephony services or the unused capacity of the fixed-telephone line network. If it is not possible to include public payphones, then this should be indicated. Some countries may not include all the elements mentioned. In this case, countries should specify the items included in this indicator in a note.

Source

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.19. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i116 Percentage of fixed-telephone subscriptions that are residential

Definition

Percentage of fixed-telephone subscriptions that are residential refers to the percentage obtained by dividing the number of active fixed-telephone subscriptions serving households (i.e. lines that are not used for business, government or other professional purposes or as public telephone stations) by the number of fixed telephone subscriptions (Indicator i112) and then multiplying by 100. A household is defined as consisting of one or more people, who may or may not be related to each other, who share accommodation and who make common provision for food. Active subscriptions include all postpaid subscriptions and those prepaid subscriptions that have registered an activity in the past three months.

Clarification
s and Scope

This indicator refers to the total number of fixed-telephone subscriptions in operation in households, divided by the number of fixed-telephone subscriptions (Indicator i112). It does not refer to the percentage of households with a telephone (which is obtained from surveys), nor does it cover the percentage of mobile-cellular subscriptions that are residential.

Source

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.25. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i112IP VoIP subscriptions

Definition

VoIP subscriptions refers to the number of voice-over-Internet protocol (VoIP) fixed-line subscriptions. It is also known as voice over broadband (VoB), and includes VoIP subscriptions through fixed wireless, DSL, cable, fibre optic and other fixed-broadband Internet platforms that provide fixed telephony using IP. It excludes software-based VoIP applications (e.g. VoIP with Skype using computer-to-computer or computer-to-telephone). Those VoIP subscriptions that do not imply a recurrent monthly fee should only be counted if they have generated inbound or outbound traffic within the past three months.

Clarification s and Scope

VoIP subscribers have their own telephone number and are able to call and be called by other telephone subscribers at any time. The key distinction between a VoIP service and a software-based VoIP application (such as Skype) is that the former includes a telephone number, is always connected, can both make and receive telephone calls to and from other telephone subscribers, and does not require the intermediation of a computer. If VoIP is not yet allowed in the country, even through licensed telephone operators, this should be specified in a note. Both residential and business subscriptions should be included.

Source

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.22. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i112pt Fixed-telephone numbers ported

Definition

Fixed-telephone numbers ported refers to the number of porting transactions within the fixed-telephone line network that have been carried out for fixed-telephone numbers during the reference year.

Clarification s and Scope

Number portability is defined in terms of the number of porting transactions (a transaction occurs each time a number is ported, and one number can be ported several times). This indicator refers to the ability of residential and business subscribers to keep their telephone number if they switch service providers. In other words, it refers to the number of transactions whereby fixed-line telephone numbers have been transferred from one fixed-telephone line operator to another fixed-telephone line operator for users who have requested to keep the same telephone number. The data should refer to actual porting transactions that have been completed, and not pending transactions. The indicator excludes mobile telephone number porting, fixed-telephone line to mobile-cellular network number porting and mobile cellular network to fixed-telephone network number porting.

Source

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.30. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

Mobile cellular network

i271 Mobile-cellular telephone subscriptions, by postpaid/prepaid

Definition

Mobile-cellular telephone subscriptions refers to the number of subscriptions to a public mobile-telephone service that provide access to the PSTN using cellular technology. The indicator includes (and is split into) the number of postpaid subscriptions, and the number of active prepaid accounts (i.e. that have been used during the last three months). The indicator applies to all mobile-cellular subscriptions that offer voice communications. It excludes subscriptions via data cards or USB modems, subscriptions to public mobile data services, private trunked mobile radio, telepoint, radio paging, M2M and telemetry services.

Clarification s and Scope

This indicator refers to telephone subscriptions to networks using mobile-cellular technology. It includes both postpaid and prepaid subscriptions. It includes mobile-cellular telephone subscriptions with access to data communications at low and medium speeds and mobile-cellular subscriptions with access to data communications at broadband speeds. It excludes trunked radio, radio-paging machine subscriptions, M2M mobile subscriptions and data-only subscriptions. Both residential and business subscriptions should be included.

Source

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.33. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.2. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU_LQ_2017.pdf

i271p Prepaid mobile-cellular telephone subscriptions

Definition

Refers to the total number of mobile-cellular telephone subscriptions that use prepaid refills. These are subscriptions where, instead of paying an ongoing monthly fee, users purchase blocks of usage time. Only active subscriptions should be included (those used at least once in the last three months for making or receiving a call or carrying out a non-voice activity such as sending or reading an SMS or accessing the Internet).

Clarification s and Scope

This indicator refers to telephone subscriptions to networks using mobile-cellular technology. It includes only prepaid subscriptions. It includes mobile-cellular telephone subscriptions with access to data communications at low and medium speeds and mobile-cellular subscriptions with access to data communications at broadband speeds. It excludes trunked radio, radio-paging machine subscriptions and data-only subscriptions. Both residential and business subscriptions should be included.

Source

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.33. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i271m2m M2M mobile-network subscriptions

Definition

M2M mobile-network subscriptions refers to the number of mobile-cellular machine-to-machine subscriptions that are assigned for use in machines and devices (cars, smart meters, consumer electronics) for the exchange of data between networked devices, and are not part of a consumer subscription. For instance, SIM-cards in personal navigation devices, smart meters, trains and automobiles should be included. Mobile dongles and tablet subscriptions should be excluded.

Source

ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.2. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU LQ 2017.pdf

i271pop Percentage of the population covered by a mobile-cellular network

Definition

Percentage of the population covered by a mobile-cellular network refers to the percentage of inhabitants within range of a mobile-cellular signal, irrespective of whether or not they are subscribers or users. This is calculated by dividing the number of inhabitants within range of a mobile-cellular signal by the total population and multiplying by 100.

Clarification s and Scope

This indicator refers to proportion of the population that lives within range of a mobile-cellular network signal, regardless of whether they actually subscribe to the service or use it. It is based on where the population lives, and not where they work or go to school, etc. The indicator is not the same as the mobile subscription density or penetration. When there are multiple operators offering the service, the maximum population number covered should be reported. Coverage should refer to all mobile-cellular technologies. If this is not the case, it should also be specified in a note.

Source

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.37. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i271pt Mobile-cellular numbers ported

Definition

Mobile-cellular numbers ported refers to the number of mobile porting transactions that have been carried out during the reference year.

Clarification s and Scope

This indicator refers to the ability of mobile-cellular subscribers to keep their telephone number if they switch service providers. In other words, it refers to the number of transactions whereby mobile-cellular numbers have been transferred from one mobile-cellular operator to another mobile-cellular operator for users who change mobile-cellular operators and have requested to keep the same telephone number. The data should refer to actual porting transactions that have been completed, and not pending transactions. The data refer to the number of mobile-cellular telephone numbers that have been ported over the year, and not the cumulative number of porting transactions. The indicator includes porting within the mobile-cellular network. It excludes fixed-telephone number porting, fixed-telephone line to mobile-cellular network number porting.

Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT,
	p.40. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

Internet

i4214u – International bandwidth usage, in Mbit/s

Definition

Average usage of all international links including fiber-optic cables, radio links and traffic processed by satellite ground stations and teleports to orbital satellites (expressed in Mbit/s). All international links used by all types of operators, namely fixed, mobile and satellite operators should be taken into account. The average should be calculated over the 12-month period of the reference year. For each individual international link, if the traffic is asymmetric, i.e. incoming traffic is not equal to outgoing traffic, then the higher value out of the two should be provided. The combined average usage of all international links can be reported as the sum of the average usage of each individual link.

Source

ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.2. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU LQ 2017.pdf

i4214l – Lit/equipped international bandwidth capacity, in Mbit/s

Definition

Total lit/equipped international bandwidth capacity refers to the total lit/equipped capacity of international links, namely fiber-optic cables, international radio links and satellite uplinks to orbital satellites in the end of the reference year (expressed in Mbit/s). If the traffic is asymmetric (i.e. incoming traffic and outgoing traffic is not equal), then the higher value out of the two should be provided.

Source

ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.3. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU LQ 2017.pdf

Fixed broadband by technology/speed

i4213tfbb Fixed-broadband subscriptions

Definition

= previous indicator on fixed (wired)-broadband subscriptions + satellite broadband (i271s) + terrestrial fixed wireless broadband (i271fw)

Fixed-broadband subscriptions refers to fixed subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or greater than, 256 kbit/s. This includes cable modem, DSL, fibre-to-the-home/building, other fixed (wired)-broadband subscriptions, satellite broadband and terrestrial fixed wireless broadband. This total is measured irrespective of the method of payment. It excludes subscriptions that have access to data communications (including the Internet) via mobile-cellular networks. It should include fixed WiMAX and any other fixed wireless technologies. It includes both residential subscriptions and subscriptions for organizations.

Source	ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.3.
	http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU_LQ_2017.pdf

i4213tfb_o Fixed-broadband subscriptions for organizations Definition Fixed-broadband subscriptions for organizations refers to the total subscriptions contracted by public and private organizations (i.e. non-residential customers) to access the public Internet at a fixed location at downstream speeds greater than, or

equal to, 256 kbit/s. This includes cable modem, DSL, fibre-to-the-home/building and fixed wireless broadband technologies. It excludes residential subscriptions and subscriptions that have access to data communications (including the Internet) via

mobile networks.

Source ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.3.

http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU_LQ_2017.pdf

i4213cab Cable modem Internet subscriptions

Definition Cable modem Internet subscriptions refers to the number of Internet subscriptions using a cable modem service to access the Internet, at downstream speeds greater

than, or equal to, 256 kbit/s. Cable modem is a modem attached to a cable television

network.

Clarification s and Scope

It excludes fixed Internet access at speeds less than 256 kbit/s. If subscriptions to lower-speed services cannot be excluded, this should be indicated in a note. Both residential and business subscriptions should be included. Any deviations from the definitions above (such as the treatment of mobile broadband using data cards) should

be specified in a note.

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, Source

p.46. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i4213dsl DSL Internet subscriptions

Definition Refers to the number of Internet subscriptions using digital subscriber line (DSL)

> services to access the Internet, at downstream speeds greater than or equal to 256 kbit/s. DSL is a technology for bringing high-bandwidth information to homes and small businesses over ordinary copper telephone lines. It should exclude very highspeed digital subscriber line (VDSL) subscriptions if these are provided using fibre

directly to the premises.

Clarification It excludes fixed Internet access at speeds less than 256 kbit/s. If subscriptions to s and Scope

lower-speed services cannot be excluded, this should be indicated in a note. Both residential and business subscriptions should be included. Any deviations from the definitions above (such as the treatment of mobile broadband using data cards) should

be specified in a note.

Source ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT,

p.46. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i4213ftth/b Fibre-to-the-home/building Internet subscriptions

Definition

Refers to the number of Internet subscriptions using fibre-to-the-home or fibre-to-the-building, at downstream speeds equal to, or greater than, 256 kbit/s. This should include subscriptions where fibre goes directly to the subscriber's premises or fibre-to-the-building subscriptions that terminate no more than 2 metres from an external wall of the building. Fibre-to-the-cabinet and fibre-to-the-node are excluded.

Clarification s and Scope

It excludes fixed Internet access at speeds less than 256 kbit/s. If subscriptions to lower-speed services cannot be excluded, this should be indicated in a note. Both residential and business subscriptions should be included. Any deviations from the definitions above (such as the treatment of mobile broadband using data cards) should be specified in a note.

Source

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.46. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i4213ob Other fixed (wired)-broadband subscriptions

Definition

Refers to Internet subscriptions using other fixed (wired)-broadband technologies to access the Internet (other than DSL, cable modem, and fibre), at downstream speeds equal to, or greater than, 256 kbit/s. This includes technologies such as ethernet LAN, and broadband-over-powerline (BPL) communications. Ethernet LAN subscriptions refer to subscriptions using IEEE 802.3 technology. BPL subscriptions refer to subscriptions using broadband-over-powerline services. Users of temporary broadband access (e.g. roaming between PWLAN hotspots), users of WiMAX and those with Internet access via mobile-cellular networks are excluded.

Clarification s and Scope

It excludes fixed Internet access at speeds less than 256 kbit/s. If subscriptions to lower-speed services cannot be excluded, this should be indicated in a note. Both residential and business subscriptions should be included. Any deviations from the definitions above (such as the treatment of mobile broadband using data cards) should be specified in a note.

Source

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.46. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i271s Satellite broadband subscriptions

Definition

Satellite broadband subscriptions refers to the number of satellite Internet subscriptions with an advertised download speed of at least 256 kbit/s. It refers to the retail subscription technology and not the backbone technology.

Clarification s and Scope

This indicator refers to broadband Internet subscriptions using a satellite connection. The service should provide a twoway capability to both download and upload data. If the ISP provides dial-up or broadband access via a fixed connection but uses satellite for national or domestic backbone connectivity, these are not considered satellite broadband Internet subscriptions. Both residential and business subscriptions should be included.

Source	ITU (2011) Handboo

k for the Collection of Administrative Data on Telecommunications/ICT, p.53. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i271fw Terrestrial fixed wireless broadband subscriptions

Definition

Terrestrial fixed wireless broadband subscriptions refers to the number of terrestrial fixed wireless Internet subscriptions with an advertised download speed of at least 256 kbit/s. This includes fixed WiMAX and fixed wireless subscriptions, but excludes occasional users at hotspots and Wi-Fi hotspot subscribers. It also excludes mobilebroadband subscriptions where users can access a service throughout the country wherever coverage is available.

Clarification s and Scope

This indicator refers to total wireless-broadband Internet subscriptions using a terrestrial fixed wireless connection. The subscriber utilizes an antenna (either provided by the operator or purchased) that allows connection to the ISP's network. Though users may have a certain degree of mobility, it is generally restricted to the range of one base station. Both residential and business subscriptions should be included.

Users of hotspots should be excluded when reporting the data for this indicator, since Wi-Fi does not in itself provide a direct connection to the Internet but redistributes a broadband connection (e.g. via DSL, cable modem, FTTH, WiMAX, broadband mobile cellular).

Any deviations from the definition above (especially distinguishing Indicator 24 from Indicator 25) should be indicated in a note.

Source

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.53. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i4213_256to2 256 kbit/s to less than 2 Mbit/s subscriptions

Definition

Refers to all fixed-broadband Internet subscriptions with advertised downstream speeds equal to, or greater than, 256 kbit/s and less than 2 Mbit/s.

Clarification s and Scope

Advertised speed refers to the speed the ISP markets the subscription at, rather than the actual speed the user may experience. Speed is measured in megabits per second (Mbits/s). This indicator refers to fixed-broadband technologies, and excludes mobilebroadband technologies. Both residential and business subscriptions should be included.

Source

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.48. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.4. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU_LQ_2017.pdf

i4213_2to10 2 Mbit/s to less than 10 Mbit/s subscriptions

Definition

Refers to all fixed-broadband Internet subscriptions with advertised downstream speeds equal to, or greater than, 2 Mbit/s and less than 10 Mbit/s.

Clarification s and Scope	Advertised speed refers to the speed the ISP markets the subscription at, rather than the actual speed the user may experience. Speed is measured in megabits per second (Mbits/s). This indicator refers to fixed-broadband technologies, and excludes mobile-broadband technologies. Both residential and business subscriptions should be included.
Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.48. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.4. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU_LQ_2017.pdf

i4213_G10 Equal to or above 10 Mbit/s subscriptions	
Definition	Refers to all fixed-broadband Internet subscriptions with advertised downstream speeds equal to, or greater than 10 Mbit/s.
Clarification s and Scope	Advertised speed refers to the speed the ISP markets the subscription at, rather than the actual speed the user may experience. Speed is measured in megabits per second (Mbits/s). This indicator refers to fixed-broadband technologies, and excludes mobile-broadband technologies. Both residential and business subscriptions should be included.
Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.48. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.4. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU_LQ_2017.pdf

Mobile broadband

i271G Percentage of the population covered by at least a 3G mobile network	
Definition	Percentage of the population covered by at least a 3G mobile network refers to the percentage of inhabitants that are within range of at least a 3G mobile-cellular signal, irrespective of whether or not they are subscribers. This is calculated by dividing the number of inhabitants that are covered by at least a 3G mobile-cellular signal by the total population and multiplying by 100. It excludes people covered only by GPRS, EDGE or CDMA 1xRTT.
Clarification s and Scope	This indicator captures mobile-broadband coverage, and refers to the proportion of the population that lives within range of at least a 3G mobile-cellular network signal, regardless of whether they actually subscribe to the service or use it. It is based on where the population lives, and not where they work or go to school. It includes the percentage of the population covered by mobile-cellular technologies such as WCDMA (UMTS) and associated technologies such as HSPA, CDMA2000 and related technologies such as EV-DO, mobile WiMAX 802.16e and LTE. It excludes the percentage of the population covered by a 2G mobile-cellular network, and by GPRS and EDGE technologies. Coverage should refer to all broadband mobile-cellular technologies. If this is not the case, it should be specified in a note.

Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT,
	p.38. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx
	ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.4.
	http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU_LQ_2017.pdf

i271GA Percentage of the population covered by at least an LTE/WiMAX mobile network

Definition

Percentage of the population covered by at least an LTE/WiMAX mobile network refers to the percentage of inhabitants that live within range of LTE/LTE-Advanced, mobile WiMAX/WirelessMAN or other more advanced mobile-cellular networks, irrespective of whether or not they are subscribers. This is calculated by dividing the number of inhabitants that are covered by the previously mentioned mobile-cellular technologies by the total population and multiplying by 100. It excludes people covered only by HSPA, UMTS, EV-DO and previous 3G technologies, and also excludes fixed WiMAX coverage.

Source

ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.4. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU LQ 2017.pdf

i271mw Active mobile-broadband subscriptions

Definition

=i271mb_active + i271md

Active mobile-broadband subscriptions refers to the sum of active handset-based and computer-based (USB/dongles) mobile-broadband subscriptions to the public Internet. It covers actual subscribers, not potential subscribers, even though the latter may have broadband-enabled handsets. Subscriptions must include a recurring subscription fee or pass a usage requirement – users must have accessed the Internet in the last three months. It includes subscriptions to mobile-broadband networks that provide download speeds of at least 256 kbit/s (e.g. WCDMA, HSPA, CDMA2000 1x EVDO, WiMAX IEEE 802.16e and LTE), and excludes subscriptions that only have access to GPRS, EDGE and CDMA 1xRTT.

Source

ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.5. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU_LQ_2017.pdf

i271mb_active Data and voice mobile-broadband subscriptions

Definition

Data and voice mobile-broadband subscriptions refers to subscriptions to mobile-broadband services that allow access to the open Internet via HTTP and in which data services are contracted together with voice services (mobile voice and data plans) or as an add-on package to a voice plan. These are typically smartphone-based subscriptions with voice and data services used in the same terminal. Data and voice mobile-broadband subscriptions with specific recurring subscription fees for Internet access are included regardless of actual use. Prepaid and pay-per-use data and voice mobile-broadband subscriptions should only be counted if they have been used to access the Internet in the last three months. M2M subscriptions should be excluded. The indicator includes subscriptions to mobile networks that provide download speeds of at least 256 kbit/s (e.g. WCDMA, HSPA, CDMA2000 1x EV-DO, WiMAX IEEE 802.16e

	and LTE), and excludes lower-speed technologies such as GPRS, EDGE and CDMA 1xRTT.
Source	ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.5. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU LQ 2017.pdf

i271md Data	a-only mobile-broadband subscriptions
Definition	Data-only mobile-broadband subscriptions refers to subscriptions to mobile broadband services that allow access to the open Internet via HTTP and that do not include voice services, i.e. subscriptions that offer mobile broadband as a standalone service, such as mobile-broadband subscriptions for datacards, USB modem/dongle and tablets. Data-only mobile-broadband subscriptions with recurring subscription fees are included regardless of actual use. Prepaid and pay-per-use data-only mobile-broadband subscriptions should only be counted if they have been used to access the Internet in the last three months. M2M subscriptions should be excluded. The indicator includes subscriptions to mobile networks that provide download speeds of at least 256 kbit/s (e.g. WCDMA, HSPA, CDMA2000 1x EV-DO, WiMAX IEEE 802.16e and LTE), and excludes lower-speed technologies such as GPRS, EDGE and CDMA 1xRTT. It excludes data subscriptions that are contracted together with mobile voice services.
Source	ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.5. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU LQ 2017.pdf

i271mwa Acti	ive subscriptions to LTE/WiMax mobile-broadband networks
Definition	Active subscriptions to LTE/WiMAX mobile-broadband networks refers to subscriptions that have generated Internet traffic in the last 90 days in LTE/mobile WiMAX and other advanced mobile-broadband networks, such as LTE-Advanced and Wireless MAN. It excludes subscriptions having generated Internet traffic only in HSPA, UMTS, EV-DO and previous 3G networks, and also excludes fixed WiMAX subscriptions.
Source	ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.5. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU LQ 2017.pdf

Bundled telecommunication services

Definition of bundled telecommunication service: a bundled telecommunication services is defined as a prepaid or postpaid subscription meeting all of the following criteria:

- 1. A commercial offer that includes two or more of the following services: fixed telephone, mobile voice, fixed broadband, mobile broadband, pay TV;
- 2. Marketed as a single offer, with a single invoice and with a single price for the set of services included in the bundle;
- 3. Subscribed under conditions that cannot be obtained by adding single play offers together.

i4213_2x Subscriptions to fixed-broadband and fixed-telephone bundles

Definition Subscriptions to fixed-broadband and fixed-telephone bundles refers to the number

of bundled telecommunication subscriptions including fixed-broadband and fixed telephone services. Only those subscriptions that meet the criteria established in the definition of bundled telecommunication services should be included. Subscriptions that include additional telecommunication services – such as triple play subscriptions

including fixed telephony, fixed broadband and pay TV – should be excluded.

Source ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.6. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU LQ 2017.pdf

i4213_3x Subscriptions to fixed-broadband, fixed-telephone and pay-TV bundles

Definition Subscriptions to fixed-broadband, fixed-telephone and pay-TV bundles refers to the number of bundled telecommunication subscriptions including fixed-broadband,

fixed-telephone and pay-TV services. Only those subscriptions that meet the criteria established in the definition of bundled telecommunication services should be included. Subscriptions that include additional telecommunication services – such as quadruple play subscriptions including fixed telephony, fixed broadband, pay TV and

mobile voice/data – should not be counted under this indicator.

Source ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.6.

http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU_LQ_2017.pdf

Quality of service

i146u Mobile-cellular unsuccessful call ratio (%)

Definition Mobile-cellular unsuccessful call ratio refers to the ratio of unsuccessful mobile-cellular calls

to the total number of mobile-cellular call attempts in a given year. An unsuccessful call is a call attempt to a valid number where (a) the call is not answered, (b) there is no called party busy tone, and (c) there is no ringing tone on the caller's side within 40 seconds from the moment when the last digit of the called number is received by the network. The caller must

be within coverage of a mobile-cellular network. The data should be expressed in per cent.

Source ITU (2014) Covering Note: New telecommunication/ICT indicators from administrative data sources, 2011-2013, p.2. https://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-ITC_IND_HBK-

2011-C1-PDF-E.pdf

ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.6.

http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU_LQ_2017.pdf

i146d Mobile-cellular dropped call ratio (%)

Definition Mobile-cellular dropped call ratio refers to the proportion of incoming and outgoing mobile-cellular calls which, once they have been correctly established and therefore have an assigned traffic channel, are dropped or interrupted prior to their normal

completion by the user, the cause of the early termination being within the operator's network. The data should be expressed in per cent.

Source	ITU (2014) Covering Note: New telecommunication/ICT indicators from administrative data
	sources, 2011-2013, p.2. https://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-ITC_IND_HBK-
	<u>2011-C1-PDF-E.pdf</u>
	ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.6.
	http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU_LO_2017.pdf

i147t Service	e activation time for fixed-broadband service (in days)
Definition	Service activation time for fixed-broadband service refers to the time from the date of application to the date of service activation. The average service activation time of all new applications received within the 12 month reference period should be provided.
Source	ITU (2014) Covering Note: New telecommunication/ICT indicators from administrative data sources, 2011-2013, p.3. https://www.itu.int/en/ITU HBK-2011-C1-PDF-E.pdf ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.6. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU_LQ_2017.pdf

Traffic

i131m Domestic fixed-to-fixed telephone traffic, in minutes

Definition

Domestic fixed-to-fixed telephone traffic refers to completed local and domestic long-distance fixed-telephone voice traffic. The indicator should be reported as the number of minutes of traffic during the 12 month reference period. This should exclude minutes used for dial-up Internet access.

The indicator can be broken down as follows:

Local fixed-to-fixed telephone traffic, in minutes (i1311m)

Refers to effective (completed) fixed-telephone line voice 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, which should exclude minutes used for dial-up Internet access.

Long-distance fixed-to-fixed telephone traffic, in minutes (i1312m)

Refers to effective (completed) fixed national long-distance telephone voice traffic exchanged with a station outside the local charging area in which the calling station is situated. The indicator should be reported as the number of minutes of traffic. It excludes local calls, calls to mobile networks, calls abroad, and calls to special service numbers such as ISPs for Internet dial-up.

Clarification s and Scope	This indicator refers to all fixed-to-fixed telephone traffic within the country. It excludes fixed-to-mobile traffic, fixed traffic to abroad and fixed traffic to special numbers.
	Where some or all operators include unlimited (or a certain number of) calls or minutes in the monthly telephone subscription and do not account for this traffic, this should also be specified in a note.
Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.56. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i1313wm Fixe	i1313wm Fixed-to-mobile telephone traffic, in minutes		
Definition	Fixed-to-mobile telephone traffic refers to total traffic from all fixed-telephone networks to all mobile-cellular networks within the country. The indicator should be reported as the number of minutes of traffic during the 12 month reference period.		
Clarification s and Scope	This indicator refers to the effective (completed) volume of traffic in minutes sent from fixed-telephone lines to mobile networks within the country. The treatment of public payphone-to-mobile network traffic should be clarified in a note if it is not covered here.		
Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.57. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx		

i132m Interna	ational outgoing fixed-telephone traffic, in minutes
Definition	Refers to effective (completed) fixed-telephone voice traffic originating in a given country to destinations outside that country. This should include traffic to mobile phones outside the country. The indicator should be reported in number of minutes of traffic. It excludes calls originating in other countries. It should include VoIP traffic.
Clarification s and Scope	The i132m indicator may not reflect all outgoing international traffic, particularly if calls made using IP telephony are not included.
	Any such deviations from the definitions should be indicated in a note.
Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.58. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i132mi International incoming fixed-telephone traffic, in minutes	
Definition	Refers to effective (completed) fixed-telephone voice traffic originating outside the country with a destination inside the country, irrespective of whether the call was from a fixed or mobile subscriber. It excludes minutes of calls terminating in other countries, but should include VoIP traffic.

Clarification s and Scope	The i132mi indicator may not reflect all incoming international traffic, particularly calls made using IP telephony that are re-routed to appear as local calls.
	Any such deviations from the definitions should be indicated in a note.
Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.58. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i133wm Dom	estic mobile-telephone traffic, in minutes
Definition	Domestic mobile-telephone traffic refers to the total number of minutes of calls made by mobile subscribers within a country (including minutes to fixed-telephone and minutes to mobile-phone subscribers).
Clarification s and Scope	This indicator refers to the total amount of traffic (in minutes) originating on mobile phones with a destination to either fixed- or mobile-telephone subscriptions in the country.
Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.59. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i1332wmf O	utgoing mobile traffic to fixed networks, in minutes
Definition	Refers to the number of minutes of calls made from mobile-cellular networks to fixed-line telephone networks within the country. The indicator refers to the number of minutes originating on mobile networks and terminating on fixed-line telephone networks within the country.
Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.59. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i1333wm Out	i1333wm Outgoing mobile traffic to international, in minutes	
Definition	Outgoing mobile traffic to international refers to the number of mobile minutes originating in a country to any destinations outside that country.	
Clarification s and Scope	This indicator refers to minutes of calls originating on mobile-cellular networks with a destination abroad, irrespective of whether the call is to a fixed or mobile subscriber. It excludes minutes of calls originating in other countries and roaming minutes.	
	Any limitations with the indicator (e.g. if calls made using IP telephony are not included) should be specified in a note.	
Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.61. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx	

i1335wm Incoming international traffic to mobile network, in minutes

Definition	Incoming international traffic to mobile network refers to the number of incoming minutes (fixed and mobile) received by mobile networks originating in another country.
Clarification s and Scope	This indicator refers to minutes of calls terminating on mobile-cellular networks with an origination abroad, irrespective of whether the call is from a fixed or mobile subscriber. This should exclude roaming traffic.
	Any limitations with the indicator (e.g. if calls made using IP telephony appear as local calls) should be specified in a note.
Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.62. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i133sms SMS sent	
Definition	SMS sent refers to the total number of mobile short-message service (SMS) messages sent, both to national and international destinations. This should exclude messages sent from computers to mobile handsets or to other computers.
Clarification s and Scope	This indicator refers to text messages composed on, and sent from, a mobile handset to another mobile handset. It covers all SMS messages sent from mobile handsets to other mobile handsets (peer-to-peer), both to national and international destinations. It excludes SMS received, value-added SMS, premium SMS and SMS sent from webbased services.
	Where the indicator includes both SMS sent and received, this should be indicated in a note.
Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.64. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i132t Total international outgoing telephone traffic, in minutes	
Definition	=i1333wm+i132m
	Refers to effective (completed) international outgoing minutes of telephone traffic originating from national networks, fixed and mobile, including managed VoIP.
Clarification s and Scope	The indicator may not reflect all outgoing international traffic, particularly if calls made using IP telephony are not included.
	Limitations with the indicator should be explained in a note.
Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.67. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i132ti Total international incoming telephone traffic, in minutes Definition =i1335wm+i132mi Refers to effective (completed) international incoming minutes of telephone traffic originating outside the country and terminating in national fixed and mobile networks without transit, including managed VoIP. Clarifications and Scope The indicator may not reflect all incoming international traffic, particularly calls made using IP telephony that are re-routed to appear as local calls. Limitations with the indicator should be explained in a note.

Source

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT,

p.67. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i135tfb Fixed-broadband Internet traffic (exabytes)	
Definition	Fixed-broadband Internet traffic (exabytes) refers to traffic generated by fixed-broadband subscribers, measured at the end-user access point. It should be measured by adding up download and upload traffic. Wholesale traffic, walled-garden traffic and IPTV and cable-TV traffic should be excluded.
Source	ITU (2014) Covering Note: New telecommunication/ICT indicators from administrative data sources, 2011-2013, p.2. https://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-ITC_IND_HBK-2011-C1-PDF-E.pdf

i136mwi Mo	bile-broadband Internet traffic (within the country)
Definition	Mobile-broadband Internet traffic (within the country) refers to broadband traffic volumes originated within the country from 3G networks or other more advanced mobile networks, including 3G upgrades, evolutions or equivalent standards in terms of data transmission speeds. Traffic data should be collected and aggregated at the country level for all 3G or more advanced mobile networks within the country. Download and upload traffic should be added up and reported together. Traffic should be measured at the end-user access point. Wholesale and walled-garden traffic should be excluded. The traffic should be reported in exabytes.
Source	ITU (2014) Covering Note: New telecommunication/ICT indicators from administrative data sources, 2011-2013, p.2. https://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-ITC_IND_HBK-2011-C1-PDF-E.pdf

i136mwo Mobile-broadband Internet traffic (outside the country, roaming out)	
Definition	Mobile-broadband Internet traffic (outside the country, roaming out) refers to broadband traffic volumes originated outside the country from 3G networks or other more advanced mobile networks, including 3G upgrades, evolutions or equivalent standards in terms of data transmission speeds. Traffic data should be collected and aggregated at the country level for all customers of domestic operators roaming outside the country and using 3G or more advanced mobile networks. Download and

upload traffic should be added up and reported together. Traffic should be measured at the end-user access point. Wholesale and walled-garden traffic should be excluded.

Traffic should be reported in exabytes.

Source

ITU (2014) Covering Note: New telecommunication/ICT indicators from administrative data sources, 2011-2013, p.2. https://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-ITC_IND_HBK-2011-C1-PDF-E.pdf

Revenue (in local currency at current prices)

i75 Revenue from all telecommunication services

Definition

Revenue from all telecommunication services refers to revenue earned from retail fixed-telephone, mobile-cellular, Internet and data services telecommunication operators (both network and virtual, including resellers) offering services within the country during the financial year under review. It includes retail revenues earned from the transmission of TV signals, but excludes revenues from TV content creation. Data reported should exclude: (i) wholesale revenues (e.g. termination rates), (ii) revenues from device sales and rents, (iii) VAT and excise taxes. Any deviation from the definition should be specified in a note, including clarifications on what TV revenues are included/excluded (e.g. IPTV, cable TV, pay satellite and freeto-air TV).

Source

ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.8. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU_LQ_2017.pdf

i741 Revenue from mobile networks

Definition

Revenue from mobile networks refers to retail revenue earned from the provision of mobile-cellular communication services, including all voice, SMS and data (narrowband and broadband) services offered by mobile operators offering services within the country during the financial year under review. Revenues from value added services (e.g. premium SMS) should be included. Data reported should exclude: (i) wholesale revenues (e.g. termination rates), (ii) revenues from device sales and rents, (iii) VAT and excise taxes. Any deviation from the definition should be specified in a note.

Source

ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.8. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU LQ 2017.pdf

Investment (in local currency at current prices)

i81 Annual investment in telecommunication services

Definition

Annual investment in telecommunication services refers to the investment during the financial year made by entities providing telecommunication networks and/or services (including fixed, mobile and Internet services, as well as the transmission of TV signals) for acquiring or upgrading fixed assets (usually referred to as CAPEX), less disinvestment owing to disposals of fixed assets. Fixed assets should include tangible assets, such as buildings and networks, and non-tangible assets, such as computer software and intellectual property. The definition closely corresponds to the concept of gross fixed capital formation, as defined in the System of National Accounts 2008. The indicator is a measure of investment made by entities providing telecommunication networks and/or services in the country, and includes expenditure on initial installations and additions to existing installations where the usage is expected to be over an extended period of time. It excludes expenditure on fees for operating licences and the use of radio spectrum.

Source

ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.9. http://www.itu.int/en/ITU-D/Statistics/Documents/datacollection/ITU LQ 2017.pdf

i841f Annual foreign investment in telecommunications	
Definition	Annual foreign investment in telecommunications refers to investment during the financial year in telecommunication services (including fixed, mobile and Internet services) coming from foreign sources, also referred to as foreign direct investment (FDI).
Clarification s and Scope	This indicator refers to the investment made by foreign-owned entities in the country. It refers to an entity in one country ("direct investor") acquiring a direct investment in a telecommunication service provider in another country. The shareholding should be at least ten per cent. Direct investment is measured for the initial transaction as well as subsequent transactions.
Source	ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.112. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

Persons employed

i51 Persons employed in full-time equivalents

Definition

Full-time equivalent telecommunication employees refers to the total number of persons, in full-time equivalent (FTE)units, employed by telecommunication operators in the country for the provision of telecommunication services, including fixed, mobile and Internet services. This indicator excludes staff working in broadcasting businesses that offer only traditional broadcasting services. Part-time staff should be expressed in terms of full-time staff equivalents (FTE).

The indicator is broken down as follows:

- Persons employed by all telecommunication operators, female (i51f)
- Persons employed by all telecommunication operators, male

Clarification s and Scope

The indicator refers to all FTE telecommunication service staff directly employed by operators, regardless of occupation, in the telecommunication services (fixed and

mobile) and Internet service provision industries. Entities covered by the indicator are defined according to ISIC Revision 4, Division 61 (Telecommunications), which excludes broadcasting and ICT equipment manufacturing. Resellers (businesses that purchase and resell network capacity without providing additional services) are included in Division 61 and are therefore within the scope of this indicator. 'Outsource' businesses that specialize in telecommunication services are also included. However, outsource businesses classified in other divisions in ISIC (e.g. Activities of call centres) are excluded from the scope of this indicator. The preferred method for converting part-time to full-time employees is to use an eight-hour workday.

Source

ITU (2011) Handbook for the Collection of Administrative Data on Telecommunications/ICT, p.94. https://www.itu.int/en/ITU-D/Statistics/Pages/publications/handbook.aspx

i51f Persons employed by all telecommunication operators, female	
Definition	Refers to the total female, in full-time equivalent (FTE) units, employed by telecommunication operators in the country for the provision of telecommunication services, including fixed, mobile and Internet services. This indicator excludes staff working in broadcasting businesses that offer only traditional broadcasting services.
Source	ITU (2017) ITU World Telecommunication/ICT Indicators Long Questionnaire 2017, p.9. http://www.itu.int/en/ITII-D/Statistics/Documents/datacollection/ITII-IO 2017 ndf

Pay TV

i965IP IPTV subscriptions	
Definition	IPTV subscriptions refers to the number of subscriptions to Internet protocol television (IPTV), i.e. TV delivered over an IP-based network managed to support the required level of quality of service, quality of experience, security, interactivity and reliability. This does not include video accessed over the public Internet – for example, by streaming –and subscriptions to over-the-top audio visual content providers.
Source	ITU (2014) Covering Note: New telecommunication/ICT indicators from administrative data sources, 2011-2013, p.3. https://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-ITC_IND_HBK-2011-C1-PDF-E.pdf

i965s Satellite TV subscriptions	
Definition	Satellite-TV subscriptions refers to the number of pay direct-to-home (DTH) satellite subscriptions, i.e. pay TV received via a satellite dish capable of receiving satellite television broadcasts. This does not include free-to-air satellite TV.
Source	ITU (2014) Covering Note: New telecommunication/ICT indicators from administrative data sources, 2011-2013, p.4. https://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-ITC_IND_HBK-2011-C1-PDF-E.pdf

i965cab Cable TV subscriptions	
Definition	Cable-TV subscriptions refers to multichannel TV programming delivered over coaxial cable networks. It includes both analogue and digital cable-TV subscriptions. If the breakdown of analogue/digital cable-TV subscriptions is available, data for each type of cable-TV subscriptions should be specified in a note. It excludes IPTV delivered over cable-TV networks.
Source	ITU (2014) Covering Note: New telecommunication/ICT indicators from administrative data sources, 2011-2013, p.4. https://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-ITC_IND_HBK-2011-C1-PDF-E.pdf

i965oth Other TV subscriptions	
Definition	Other TV subscriptions refers to pay-TV subscriptions other than IPTV, satellite TV and cable TV. This includes subscriptions to TV platforms such as microwave multipoint distribution systems (MMDS) and pay digital terrestrial television (pay DTT). Free-to-air TV should not be included. The TV platforms corresponding to the data reported should be indicated in a note.
Source	ITU (2014) Covering Note: New telecommunication/ICT indicators from administrative data sources, 2011-2013, p.4. https://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-ITC_IND_HBK-2011-C1-PDF-E.pdf