SERIES C RECOMMENDATIONS

General telecommunications statistics

Recommendation

No.	*Title*
C.1	Yearbook of common carrier telecommunication statistics
C.3	Instructions for international telecommunication services

Recommendation C.1

YEARBOOK OF COMMON CARRIER TELECOMMUNICATION STATISTICS

(Geneva, 1972; Geneva, 1976; Geneva, 1980)

(1) The CCITT recommends that a Yearbook of Common Carrier Telecommunication Statistics be published annually by the General Secretariat of the ITU.

(2) This statistical Yearbook is to be a collection of data on the various branches of common carrier telecommunications (see also Recommendation F.91), namely:

— telephone service,

— telegram service,

— telex service,

— data transmission service.

(Radio services *other than broadcasting* [sound or television] are regarded as common carriers to the extent to which they are used for the transmission of paid messages between subscribers of the telecommunications undertaking.)

(3) The statistical data to be published are those covered by the items listed in Annex A to this Recommendation. Any explanations required for uniform and unambiguous interpretation of the items are given in Annex B.

(4) These statistical data should be provided each year by Administrations before 1 September of the year following the one to which they refer.

(5) The data assembled will be published in chronological series relating to the past ten years.

Important note — Those countries not in a position to communicate all the data listed in the Recommendation should provide the data they do have and mark with a dash ("—") those items not evaluated.

ANNEX A

(to Recommendation C.1)

List of items appearing in the Yearbook of common carrier telecommunication statistics

A. SIZE OF TELECOMMUNICATION SYSTEMS, TRAFFIC AND STAFF

1 Telephone service

1.1	*Size of telephone system*	
1.1.1	Number of telephone stations (sets) of all kinds connected to the public network	10^3
1.1.2	Number of main lines	10^3
1.1.3	Number of main lines connected to private branch exchanges (PBX, etc.)	10^3
1.1.4	Percentage of main lines connected to automatic exchanges	%
1.1.5	Percentage of main lines equipped for direct customer dialling to international destinations	%
1.1.6	Percentage of main lines which are residential	%
1.1.7	Connection capacity of local public switching exchanges (number of subscriber terminal equipments)	10^3
1.1.8	Number of trunk and international circuit ends connected to manual switching exchanges	10^3
1.1.9	Number of trunk and international circuit ends connected to automatic switching exchanges	10^3
1.2	*Volume of the demand for connection and size of the waiting list*	
1.2.1	New applications for main lines	10^3
1.2.2	Total demand for main lines (including transfers)	10^3
1.2.3	Waiting list for main lines	10^3
1.3	*Volume of telephone traffic*	
1.3.1	Volume of total national traffic	10^6
1.3.1.1	Volume of local traffic	10^6
1.3.1.2	Volume of national trunk (toll) traffic	10^6
1.3.2	Volume of total outgoing international traffic	10^6
1.3.3	Volume of total traffic	10^6
1.3.4	Outgoing international subscriber dialled telephone traffic as a percentage of total outgoing international telephone traffic	%

2 Public telegram service

2.1	Number of national paid telegrams	10^3
2.2	Number of international outgoing full rate telegrams	10^3
2.3	Number of international outgoing reduced rate (LT) telegrams	10^3
2.4	Number of outgoing international phototelegrams	10^3

3 Telex service

3.1	Size of telex system	
3.1.1	Number of subscriber lines	10^3
3.2	*Volume of telex traffic*	
3.2.1	Volume of national traffic	10^3
3.2.2	Volume of outgoing international traffic	10^3
3.2.3	Volume of total traffic	10^3

4 Data transmission

4.1	Size of data system	
4.1.1	Number of data terminal equipments on the public telephone and telex networks	10^3
4.1.2	Number of private leased circuits	10^3
4.1.3	Number of data terminal equipments connected to dedicated public data networks	10^3

5 Equivalent full—time telecommunications staff

5.1	Total staff in telecommunication services	10^3
5.2	Operating staff	10^3
5.3	Technical staff	10^3
5.4	Other staff	10^3

B. DEMOGRAPHIC, ECONOMIC, AND FINANCIAL INFORMATION

Area of country in square kilometres:

Denomination of the national monetary unit:

6 Demographic and macro—economic data

6.1	Number of inhabitants	10^3
6.2	Number of households	10^3
6.3	Gross domestic product at factor costs in national currency	10^6
6.4	Gross fixed capital formation in national currency	10^6
6.5	Exchange rate (national currency equivalent to one US$ at the end of the year)	
6.6	Consumer price index (1970 = 100)	

7 Income, expenditure, and financial results of telecommunication services (in the national currency, current prices)

7.1	*Total income from the telephone service*	10^6
7.1.1	Income from connection charges	10^6
7.1.2	Income from annual rentals	10^6
7.1.3	Income from calls	10^6
7.2	*Total income from the public telegram service*	10^6
7.3	*Total income from the telex service*	10^6
7.4	*Other income (data, facsimile transmission services)*	10^6
7.5	*Total income from all telecommunication services*	10^6
7.6	*Total expenditure for all telecommunication services*	10^6
7.6.1	Operational expenditure	10^6
7.6.2	Depreciation	10^6
7.6.3	Interest paid	10^6
7.6.4	Taxes	10^6
7.6.5	Other expenditure	10^6
7.7	Income minus expenditure for the telecommunication services	10^6

8 Investments (annual gross construction expenditure) on telecommunication services

8.1	Total annual gross investments in telecommunications (including land and buildings)	10^6
8.2	Total annual gross investments in telecommunications (excluding land and buildings)	10^6
8.3	Annual gross investments for telephone services	10^6
8.4	Annual gross investments in telephone switching equipment	10^6

9 Comparative ratios

9.1	Telephone main lines per inhabitant	%
9.2	Telephone stations (sets) of all kinds, per inhabitant	%
9.3	Telecommunications investments as a share of GDP	%
9.4	Telecommunications investments as a share of GFCF	%

ANNEX B

(to Recommendation C.1)

Yearbook of common carrier telecommunication statistics

Definitions, instructions and explanatory notes on how the information should be provided

General remarks

By "common carrier telecommunication" is meant the traditional field of telecommunication: telephony, telegraphy, telex and data transmission. As telecommunications undertakings in some countries are responsible for providing and maintaining sound broadcasting facilities and sometimes also for the collection of charges for these services, it is stipulated that neither these, nor the investments, income or expenditure for the service in question should be taken into account.

When items of statistics are presented in a different manner from that specified in this Annex, they should be accompanied by an explanation which facilitates their interpretation.

A. SIZE OF TELECOMMUNICATION SYSTEMS, TRAFFIC AND STAFF

1 Telephone service

Preliminary remarks

Common carrier telecommunications provide the inhabitants of a country with services involving access to the network and the possibility of sending traffic with a certain grade of service.

Access to the network is provided by switching exchanges with a certain access capacity, not all of which may be made available to users. These exchanges may be operated either manually or automatically.

The first characteristic of the size of a system from the traffic point of view is therefore the number of connection points to the network, i.e. *main lines*.

The second characteristic of the size of the system is the number of points of access to the network, i.e. *telephone sets*.

The traffic introduced at the points of access to a network is routed between the different switching exchanges by manually or automatically operated circuits.

1.1 *Size of telephone system*

1.1.1 *Telephone stations (sets) of all kinds connected to the public network*

Under this heading should be indicated the total number of telephone sets which have access to the public switched network.

1.1.2 *Main lines*

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 “main station” which is commonly used in telecommunication documents.

It is understood that:

— the line connected to the telephone exchange may be either an exclusive exchange line or a shared line;

— when a subscriber's equipment has several extensions (private branch exchange), the number of main lines is equal to the number of lines connecting the installation to the telephone exchange, whether these lines are operated in one direction or in both directions.

Example:

A subscriber's equipment with extensions is served by 50 lines which connect it to the telephone exchange. The installation has ten operating positions (and therefore ten “operator's stations”) and 500 extensions. In accordance with the above definition this installation must be counted as having *50 main lines* (i.e. as many as there are lines connecting the subscriber installation to the exchange).

In other words, it will not be counted as having:

— either *one* main line (which would refer to the installation),

— or *ten* main lines (which would correspond to the number of operator's stations).

It will thus be seen that according to this definition the number of main lines to be entered in the Statistics is equal to the number of individual lines connected to the exchange.

1.1.3 *Main lines connected to private branch exchanges (PBX, etc.)*

The number of these lines corresponds to the number of exchange lines connecting the PBX, etc. to the exchange.

1.1.4 *Percentage of main lines connected to automatic exchanges*

This percentage is obtained by dividing the number of main lines connected to automatic telephone exchanges by the total number of main lines.

1.1.5 *Percentage of main lines equipped for direct customer dialling to international destinations*

This percentage is obtained by dividing the number of main lines with access to the automatic international service by the total number of main lines.

1.1.6 *Percentage of main 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 professional purposes or as public telephone stations) by the total number of main lines.

1.1.7 *Connection capacity at local public switching exchanges*

The total capacity of public switching exchanges corresponds to the maximum number of main lines which 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).

1.1.8 ⎫
⎬ *Trunk and international circuit ends*
1.1.9 ⎭

Under these two headings should be indicated the total number of trunk and international circuits[1)] terminating at switching exchanges; no account should be taken of whether the circuit is incoming, outgoing or both—way, nor of the type of trunk or international exchange at the other end of the circuit, nor whether the other end is located within the same or another country.

The only distinction to be made is between the classes of operational use of these circuits, according to whether they are to be used for:

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1) Telephone circuit (international or trunk circuits) is defined in CCITT Recommendation E.100 (Fascicle II.2 of the *Blue Book*).

a) manual operation;[2)]

b) semi—automatic or automatic operation.

1.2 *Volume of the demand for telephone connection and size of the waiting list*

Requests for connection and waiting list for the telephone service refer to applications for a main line.

1.2.1 *New applications for main lines*

New applications for main lines are applications submitted for the first time.

1.2.2 *Total demand for main lines (including transfers)*

The total demand includes new applications and applications for transfer. A transfer application is an application submitted by the holder of a main line who wants it to be transferred from one place to another.

1.2.3 *Waiting list for main lines*

The waiting list comprises applications for connection which have had to be held over owing to a lack of technical availabilities (equipments, lines, etc.).

Each country should specify in a footnote the period (in days, weeks or months), counting from the date on which the application is submitted, beyond which applications are considered as being on the waiting list.

1.3 *Telephone traffic*

Depending on the type of telephone exchange equipment, telephone traffic can be measured by the number of calls, by the number of charged pulses or, in certain cases, by the number of charged minutes. It is preferable to provide the number of calls, even if this has to be estimated. In any case, the applied unit must be indicated.

Calls actually set up (successful calls) are classified in two categories for charging purposes: chargeable calls and non—chargeable calls. Non—chargeable calls include "service" calls made from Administration service stations, emergency directory assistance calls or other facility calls (where these are not charged for) and test calls for the technical monitoring of equipment.

1.3.1 *Total national traffic*

This covers all the effective (completed) traffic which both originates and terminates within the same country.

1.3.1.1 *Local traffic*

Local traffic consists of effective (completed) 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).

Each country should include a footnote explaining what it understands by the "local charging area" and indicating the number of such areas and their average size (in km^2).

1.3.1.2 *National trunk (toll) traffic*

National trunk (toll) traffic consists of effective (completed) national traffic exchanged with a station outside the local charging area of the calling station.

1.3.2 *Total outgoing international traffic*

This covers all the effective (completed) traffic originating in a given country to destinations outside that country.

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2) International circuits are designated in different ways by the technical services depending on how they are used (see CCITT Recommendation M.140, §§ 1.2.2, 1.2.3 and 1.2.4 [Fascicle IV.1 of the *Blue Book*]).

1.3.3 *Total traffic*

Total traffic is the sum of national traffic (§ 1.3.1) and outgoing international traffic (§ 1.3.2).

1.3.4 *Outgoing international subscriber dialled telephone traffic as a percentage of total outgoing international telephone traffic*

This is obtained by dividing the volume of automatic international outgoing traffic, i.e. the fully automatic traffic, by the total volume of international outgoing traffic.

2 Public telegram service

The public telegram service is concerned with the reproduction at a distance of documentary matter such as written, printed or pictorial matter. A pictorial document reproduced is a phototelegram. The traffic is measured by the number of telegrams or phototelegrams.

Note — It must not be confused with the public facsimile service, the traffic for which must not be included.

2.1 *National paid telegrams*

The number of charged telegrams which both originate and terminate within the same country.

2.2 *International outgoing full rate telegrams*

The number of charged outgoing full rate telegrams originating in a given country with a destination outside the country.

2.3 *International outgoing LT telegrams*

The number of outgoing reduced rate telegrams (letter—telegrams) originating in a given country with a destination outside the country.

2.4 *Outgoing international phototelegrams*

The number of paid outgoing phototelegrams originating in a given country with a destination outside the country.

3 Telex service

3.1 *Size of telex system*

3.1.1 *Subscriber line*

A 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.

3.2 *Telex traffic*

Telex traffic is measured by the number of calls, by the number of charged pulses or in certain cases by the number of charged minutes. It is preferable for the information to be supplied in charged minutes. In any case, the applied unit must be indicated.

3.2.1 *National traffic*

All the traffic which both originates and terminates within the same country.

3.2.2 *Outgoing international traffic*

All the outgoing traffic originating in a given country with a destination outside the country.

3.2.3 *Total traffic*

Total traffic is the sum of national traffic and outgoing international traffic.

4 Data transmission

4.1 *Size of data system*

4.1.1 Number of data terminal equipments on the public telephone and telex networks.

4.1.2 Number of private leased circuits.

4.1.3 Number of data terminal equipments connected to dedicated public data networks.

5 Equivalent full—time telecommunication staff

The definitions applied to staff in some countries might differ to a greater or lesser extent from those in the Yearbook. It is therefore very important that such differences be explained.

5.1 *Total staff in telecommunications services*

Full—time equivalent staff of either sex employed by the telecommunication enterprises in the country for the common carrier telecommunication services.

5.2 *Operating staff*

Full—time equivalent staff employed by the telecommunications Administration/enterprise itself for:

— setting up of telephone and telex calls and the transmission and distribution of telegrams,

— answering requests for information in the switching exchanges (e.g. directory assistance),

— auxiliary work directly related to the above tasks and performed by the same grade of staff (e.g. exchange clerical work performed by operating staff),

— supervisory duties.

5.3 *Technical staff*

Full—time equivalent staff employed by the telecommunications Administration/enterprise itself for the installation, upkeep, maintenance and repair of telecommunications plant and lines.

5.4 *Other staff*

Full—time equivalent staff employed by the telecommunications Administration/enterprise itself for:

— management and administration,

— research and development,

— public relations,

— budgeting and accounting,

— other support functions.

6 Demographic and macro—economic data

Since the information about demographic and macro—economic data comes from sources outside the telecommunication services, the definitions and numerical information are those used in the Yearbook of National Accounts Statistics published by the United Nations Organizations. The financial information should be given in the national currency at current prices.

7 Income, expenditure and financial results of telecommunication services

The concepts of income, expenditure and financial results of telecommunication services depend on the legal, financial and accounting framework within which the telecommunication services are operated in each country.

7.1 to 7.5 *Income*

Income consists of all telecommunication revenue earned during the financial year under review. This may include income from subscribers, other national and foreign telecommunication Administrations, governments, etc., after deduction of the share of this income to be paid to other Administrations or organizations for outgoing telecommunication traffic (Administrations of the incoming and possibly transit countries).

It does not, however, include monies received in respect of revenue earned during previous financial years, neither does it include monies received by way of loans from governments, investors or money markets, nor monies received from repayable subscribers' contribution or deposits.

7.6 *Total current expenditure for all telecommunication services*

Generally speaking, the total disbursements should be broken down into capital expenditure for investments and current expenditures. The investment concept is explained in the paragraphs which follow.

Current expenditure means expenditure other than investments; it consequently refers to the running of telecommunication services on an annual basis and comprises, for instance the elements mentioned below under §§ 7.6.1 to 7.6.5:

7.6.1 *Operational expenditure*

— on salaries, etc. of operational staff, cost of material for operational purposes, etc.,

— labour and material costs of maintenance and repair of the existing system.

7.6.2 *Depreciation*

Depreciation means the financial charge made in the year for the loss of value of installed equipment and is normally calculated on hypotheses based on the useful life of the different categories of equipment.

7.6.3 *Interest*

Interest refers to the financial year for loans associated with fixed and current assets.

7.6.4 *Taxes*

Taxation refers to taxes on the Administration's income, expenditure, profit or capital (e.g. corporation tax, income tax, excise taxes, non—recoverable VAT and local land taxes) raised by central or local government. This item does not include pay—related (e.g. social) taxes.

7.6.5 *Other expenditure*

“Other expenditure” means current expenditure which cannot be regarded as connected with operation, depreciation, interest or taxation. (N.B. It does not include expenditure on capital items.)

8 Investments (annual gross construction expenditure) on telecommunication services

The term “investments” generally means the expenditure associated with acquiring the ownership of property 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.

A distinction must be made between gross investment and net investment (after deduction of depreciation). It proved impossible to apply the concept of net investment, because of the considerable differences in the interpretation of the concept of depreciation in the telecommunication sector.

9 Comparative ratios

9.1 Item 1.1.2/Item 6.1 expressed in %.

9.2 Item 1.1.1/Item 6.1 expressed in %.

9.3 Item 8.1/Item 6.3 expressed in %..

9.4 Item 8.1/Item 6.4 expressed in %..