

METHODOLOGICAL NOTE CONCERNING CLASSIFICATION OF ECONOMIES BY SOCIO-ECONOMIC GROUP

Contribution to the SG3 Focus Group from the ITU Secretariat, 1 July 1998

Context

The Chairman's working document (revised, 12th June 1998) for the work of the Focus Group on accounting rate reform sets out four main tasks to be undertaken by the Group, namely:

- a) to develop a set of figures for direct and transit relations which may take the form of target rates (expressed in fractions of an SDR per minute) or targets for staged reductions (expressed in percentage change per year);
- b) to define an appropriate time trajectory from 1998 to a specific date to be determined or until cost-orientation is achieved;
- c) to tailor transition paths, taking into account the different stages of telecommunications development in different countries or regions
- d) to define the levels of contributions to a universal service fund or other charges which could be identified.

An essential preliminary step in this work is to agree upon a classification of economies by socio-economic group, particularly in the context of step c) above.

Several of the initial contributions to the work of the Focus Group propose alternative approaches to grouping economies.

- Input document 12 from the Vice-Chair (Anthony Wong, Hongkong SAR) proposes, as part of the Work Programme of the Group, to stratify Member States into several broad categories in terms of their telephone network size, telephone penetration rate, past and future pace of network growth, and their income level.
- Input document 15 from Theresa Evert (AT&T) propose a three-fold stratification, for the purpose of calculating best practice rates, based on OECD countries, Middle Income economies and the Least Developed Economies (LDCs)
- The FCC benchmarks ruling uses four income groups which follow the World Bank's 1994 classification (low income, lower-middle, upper middle and high income) plus a further category for economies with a teledensity (telephone lines per 100 inhabitants) of below 1.

Objectives

This document proposes a classification of economies based on elements contained in the three proposals noted above. The aim is to produce a relatively small number of groups, the members of which are relatively homogeneous for the purposes of accounting data analysis. This implies that, within each group the economies represented might be expected to have a relatively similar level of economic and telecommunication development. Furthermore, the impact of the anticipated shift towards cost-oriented settlement rates would be expected to have a similar effect on the members within each Group. However, *between* groups the differences should be evident as clear break points. A secondary consideration is that sufficient data should be available for the analysis of their telecommunication economies.

Proposals

The first decision to make is which economies should be taken into account. The list should be as inclusive as the data allows. In the analysis which follows, the 200 economies included in the ITU's World Telecommunication Indicators (WTI) Database have been used. This covers all 188 ITU Member States, plus other major economies such as Hongkong SAR, Macau, Seychelles etc.

The second decision is whether to base the analysis on a telecommunication-specific variable (such as teledensity), a socio-economic variable (such as income) or a combination of the two. In practice, the two are very closely related as is shown in the analysis below. However, because it is anticipated that the possible effects of settlement rate reduction will have an effect on *overall* development of particular economies, not just their telecommunication sector (as demonstrated by the Country Case Studies). The analysis which follows is therefore based primarily upon a socio-economic classification.

The third decision concerns how many groups should be established. Ms Evert suggests three groups while the FCC use five. The ITU, in its data analysis¹, uses four main groups in line with the classification used by the World Bank. In terms of defining relatively homogeneous groups, the difficulty lies at the two extremes. While middle-income groups are relatively homogeneous, the low and high income groups are more diverse for the purposes of settlement rate analysis:

- The World Bank's Low Income category contains economic giants, such as China and India, as well as islands and micro-states, such as Sao Tomé e Príncipe or Bhutan. For that reason, it is desirable to identify separately those low income economies likely to be the most vulnerable to changes in the international telecommunication environment and other, larger economies which, although they may be adversely affected, are likely to be able to adapt more readily. A convenient way of distinguishing is to divide between the 48 economies recognised by the United Nations General Assembly (UNGA) as being the Least Developed Countries (LDCs), and "other" Low Income countries. The criteria defined by the UNGA are relatively stable and rigorous in their application.
- The World Bank's High Income category also contains a diverse mix of countries, many of which are large and economically advanced (such as the United States, Japan or much of Europe) and others of which are small in size (such as Aruba or Bermuda) and owe their high per capita GNP to tourism (e.g., Bahamas) or natural resources (e.g., Qatar). It is therefore useful to distinguish between those countries which are Members of the Organisation for Economic Co-operation and Development (OECD), a club of the world's advanced, industrialised market-based democracies, and other high income economies.

On the basis of this reasoning, it is possible to propose six main groups of economies: LDCs, other low income, lower-middle income, upper-middle income, OECD Member States and other high income. The full list of economies is shown in an Annex to this document.

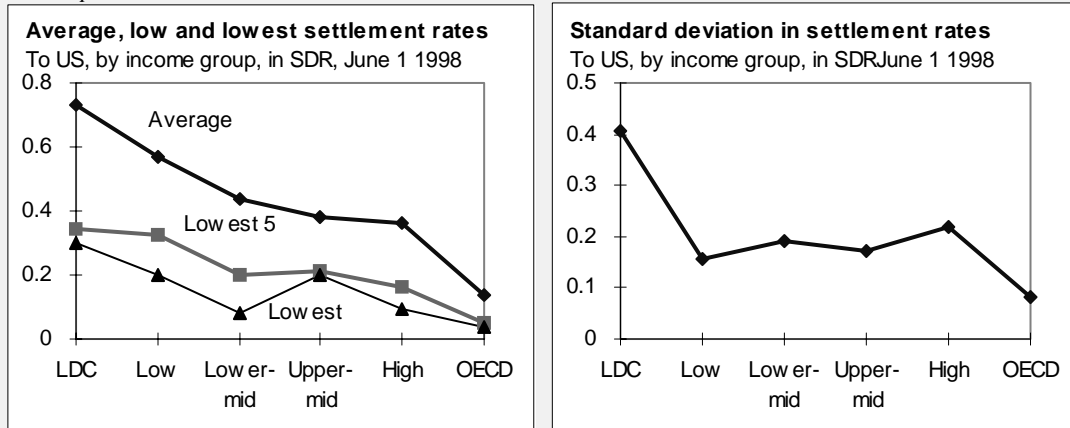
Analysis of settlement rate data

In line with the objectives set out above, the first question to be asked is whether the groupings chosen are relatively homogeneous for the purposes of settlement rate analysis. Table 1 shows average, lowest and average of the lowest five for economies level of the settlement rate with the United States (in SDR, at 1 June 1998, using data submitted in Document 9) for each group. It also shows the standard deviation in each group, a statistical measure of the level of difference within the group). The results are also summarised in Figure 1.

¹ See, for instance, the ITU's World Telecommunication Development Report.

Figure 1: Settlement rates to US, by income group, average, lowest, average of lowest five and standard deviation

Settlement rates reported in SDR at 1st June 1998



Source: Adapted from FCC data provided by Ken Stanley. For original data, see the file <http://www.fcc.gov/ib/td/pf/account.html>. Exchange rates used = SDR 1 = US\$ 1.336.

The range, in terms of average levels of settlement rates of the two extremes, is between 0.73 SDR and 0.14 SDR per minute. It is noticeable that OECD countries have a much lower average settlement rate than other high income countries (0.14 SDR compared with 0.36 SDR). Similarly, the LDCs are recognisable as distinct group from other low income countries (0.73 compared with 0.57 SDR), though with a much greater degree of internal diversity, as reflected in the standard deviation of 0.40.

One of the four proposed “interim transitional mechanisms” to be examined by the Focus Group are best practice rates. Table 1 and Figure 1 show both the lowest rate in each category and the average of the lowest five rates. The analysis shows that the operator offering the lowest rates in each group often has close links with the United States, either through ownership (e.g., US-owned companies active in DPR Congo, Jamaica and Australia) or historical links (e.g., Guam). This rate is therefore often not representative of the grouping as a whole, as there may be scope for transfer pricing between the US company and its foreign subsidiary. A more reliable alternative is to examine the average of the lowest five rates for each grouping. This produces figures which vary between 0.344 SDR in the LDCs and 0.048 SDR in the OECD countries. Again, the variation lies mainly at the extremes rather than in the middle where “best practice” among the lower-middle and upper-middle income economies is very similar (0.200 SDR compared with 0.214 SDR).

Table 1: Summary of US settlement rate levels for different economy groups

Settlement rate data is expressed in SDR and is valid for 1st June 1998

	<i>LDCs</i>	<i>Other low income</i>	<i>Lower middle income</i>	<i>Upper middle income</i>	<i>Other high income</i>	<i>OECD</i>
Definition	48 economies recognised by UNGA as being the Least Developed	Other economies with a 1995 GNP per capita of US\$765 or less	Economies with a 1995 GNP per capita of US\$766-3'035	Economies with a 1995 GNP per capita of US\$3'036-9'386	Other economies with a 1995 GNP per capita of US\$9'386 or more	The 29 Member States of the OECD
No. of economies	48	24	55	24	27	29
Population (000), 1996	593'691	2'704'654	1'061'097	314'040	45'996	1'091'981
As % of world	10.22%	46.54%	18.26%	5.40%	0.79%	18.79%
Average settlement rate (SDR)	0.731	0.566	0.441	0.381	0.363	0.141
Lowest rate	0.300	0.200	0.082	0.200	0.094	0.037
Country (PTO)	DPR Congo (ONPTZ)	Bosnia and Herzegovina	Jamaica (Digiport Int'l)	Croatia, Guadeloupe, Malta	Guam	Australia (TNS/TeleGroup)
Average, lowest five	0.344	0.327	0.200	0.214	0.163	0.048
Countries	DPR Congo, Uganda, Malawi, Liberia, Equatorial Guinea	Bosnia, Albania, Nicaragua, Ghana, Zimbabwe	Jamaica (Digiport), Dominican Republic (AAC&R), Lithuania Omnitel, Slovak Republic, Bulgaria	Croatia, Guadeloupe, Malta, Malaysia (Mutiar), Mayotte	Guam, Brunei (DSTCom), Martinique, French Guiana, Andorra	Australia (TNS/TeleGroup), US, UK (Energis, GlobalOne), Sweden (Tele2), Canada
Highest	2.073	0.749	1.175	0.750	0.936	0.318
Country	Afghanistan	Kyrgyzstan	DPR Korea	Saudi Arabia	French Polynesia	Korea, Rep. of
Standard deviation	0.406	0.156	0.191	0.172	0.221	0.082

Notes: In some cases several economies in a particular group share the same level. Where there are different PTOs in a country with different settlement rates, the operator with the lowest level is recorded. Where countries have volume-based settlement rates, the main rate is taken. Where countries have peak and off-peak rates, the peak rate is taken. Where countries have asymmetric rates, the settlement rate is recorded as the rate paid by the United States.

Source: Adapted from FCC data provided by Ken Stanley. For the original data, see the file at <http://www.fcc.gov/ib/td/pf/account.html>.

Telecommunication-specific indicators

The next test to be applied to the proposed socio-economic grouping of countries is to examine a range of telecommunication-specific variables. For the purposes of the analysis here, the three telecommunication indicators proposed in the contribution from the Vice-Chair, Mr Wong (Hongkong SAR) have been used; namely telephone main lines 1996, teledensity (main lines per 100 inhabitants, 1996) and main line growth rate, 1990-96. Table 2 and Figure 2 summarises the breakdown of these three indicators according to the socio-economic groupings defined above.

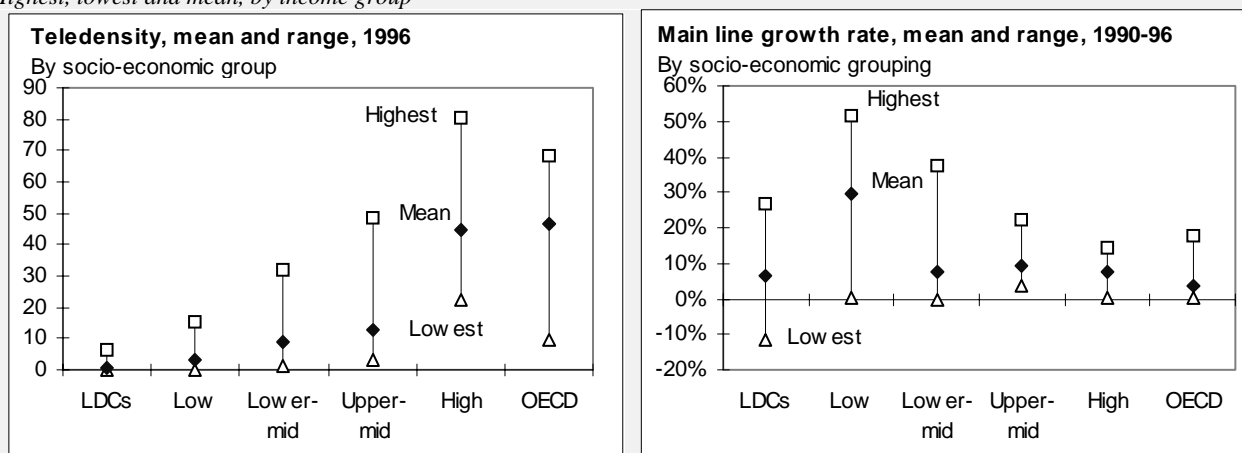
Table 2: Telecommunication indicators by socio-economic grouping, 1996

	<i>LDCs</i>	<i>Other low income</i>	<i>Lower-middle income</i>	<i>Upper-middle income</i>	<i>Other high income</i>	<i>OECD</i>
Main lines (000), 1996	2'007	78'005	92'898	39'190	20'549	511'363
As % of world	0.27%	10.48%	12.49%	5.27%	2.76%	68.73%
Teledensity, 1996	0.34	2.88	8.75	12.48	44.68	46.83
Highest in group	6.37	15.40	31.67	48.30	80.68	68.22
Lowest in group	0.08	0.32	1.07	3.16	22.36	9.28
Standard deviation	1.49	3.70	7.90	12.23	15.17	14.51
Line growth rate, 1990-96	6.71%	29.60%	7.68%	9.14%	7.34%	3.91%
Highest in group	27.02%	51.39%	37.49%	22.08%	14.48%	17.80%
Lowest in group	-11.52%	0.45%	0.00%	3.81%	0.02%	0.52%
Standard deviation	7.27%	11.94%	7.04%	4.31%	2.97%	3.91%

Source: ITU World Telecommunication Indicators Database.

Figure 2: Teledensity, 1996, and main line growth rate, 1990-1996

Highest, lowest and mean, by income group



Source: ITU World Telecommunication Indicators Database.

The OECD countries account for just over two-thirds of the entire global user base of main lines, though within the OECD area there is a wide range between the teledensity of Sweden (68.2) and that of Mexico (9.28). Other socio-economic groups are much smaller in terms of the number of main lines but have faster rates of growth.

The analysis of the telecommunication indicators confirms the wisdom of distinguishing between the LDCs (average teledensity, 0.34) and other low income countries (teledensity, 2.88). The telecommunications development gap between these two groups is widening, as demonstrated by the fact that the LDCs are expanding their networks by less than 7 per cent per year while other low income countries are growing by almost 30 per cent per year.

The argument in favour of distinguishing between OECD countries and other high income countries is less convincing because the two groupings have similar levels of teledensity (46.8 for OECD, 44.7 for other high income) and similar growth rates (3.9 per cent compared with 7.4 per cent). Nevertheless, as shown in Table 1, the differences in the average settlement rates (0.141 SDR for OECD countries compared with 0.726 SDR for other high income) justifies the distinction for the purposes of the work of the Focus Group.

Conclusion

The objective of this paper is to propose a socio-economic classification of countries that would be useful for the purposes of the Focus Group in tailoring transition paths towards cost-oriented settlement rates for different countries at different levels of telecommunication and socio-economic development. The proposed solution recognises six different categories based on the criteria of economic wealth per capita and/or membership of a pre-defined economic grouping: LDCs, other low income, lower-middle income, upper-middle income, other high income and OECD Member States. The proposed grouping can be discussed further within the Focus Group, and if necessary refined, and should provide a stable platform for future work.

ANNEX: Data for economies, by socio-economic group

Table A: Least Developed Countries

<i>Economy (PTO)</i>	<i>Main lines (000), 1996</i>	<i>Teledensity, 1996</i>	<i>Line growth, 1990-96 (%)</i>	<i>Accounting rate to US, 1/6/98 (SDR per minute)</i>
Afghanistan	29.0	0.14	-3.63%	4.146 SDR
Angola	52.4	0.47	-4.70%	1 SDR
Bangladesh	316.1	0.26	4.56%	1.198 SDR (\$1.60)
Benin	32.7	0.59	14.14%	0.749 SDR (\$1.00)
Bhutan	6.1	1.01	21.68%	2.82 SDR
Burkina Faso	34.1	0.32	13.20%	1.123 SDR (\$1.50)
Burundi	15.2	0.25	11.38%	1.09 SDR
Cambodia	8.1	0.08	8.27%	1.8 SDR
Cape Verde	25.2	6.37	20.49%	0.749 SDR (\$1.00)
Central African Rep.	9.7	0.29	11.66%	1.6 SDR
Chad	6.0	0.09	6.89%	1.96 SDR
Comoros	5.0	0.79	7.29%	2 SDR
DPR Congo	36.0	0.08	0.96%	0.599 SDR (80¢)
<i>ONPTZ</i>				0.599 SDR (80¢)
<i>SpaceTel</i>				0.599 SDR (80¢)
<i>Telecel</i>				0.599 SDR (80¢)
Djibouti	8.2	1.32	6.11%	1.123 SDR (\$1.50)
Equatorial Guinea	3.7	0.89	18.87%	0.749 SDR (\$1.00)
Eritrea	18.9	0.51	n.a.	1.497 SDR (\$2.00)
Ethiopia	148.7	0.25	2.89%	1.347 SDR (\$1.80)
Gambia	21.3	1.89	22.96%	0.749 SDR (\$1.00)
Guinea	16.2	0.73	4.88%	0.8 SDR
Guinea-Bissau	7.9	0.22	6.19%	1.6 SDR
Haiti	60.0	0.82	4.91%	0.898 SDR (\$1.20)
Kiribati	2.1	2.67	10.06%	2.994 SDR (\$4.00)
Lao P.D.R.	19.5	0.39	18.84%	2.620 SDR (\$3.50)
Lesotho	16.0	0.77	4.37%	0.8 SDR
Liberia	4.5	0.16	-11.52%	0.749 SDR (\$1.00)
Madagascar	39.4	0.26	3.78%	2.614 SDR
Malawi	35.5	0.35	4.89%	0.674 SDR (90¢)
Maldives	15.3	5.81	16.08%	1.871 SDR (\$2.50)
Mali	21.3	0.19	11.35%	1.243 SDR (1.66)
Mauritania	10.2	0.43	9.62%	1.243 SDR (\$1.66)
Mozambique	59.9	0.34	3.97%	1.05 SDR
Myanmar	178.6	0.39	16.87%	3.743 SDR (\$5.00)
Nepal	112.6	0.53	11.92%	1.497 SDR (\$2.00)
Niger	15.4	0.16	8.77%	0.973 SDR (\$1.30)
Rwanda	15.0	0.28	6.33%	1.310 SDR (\$1.75)
S. Tomé & Príncipe	2.5	1.89	2.47%	1.6 SDR (\$1.50)
Samoa	8.3	4.97	12.36%	1.123 SDR (\$1.50)
Sierra Leone	17.2	0.40	4.39%	1.123 SDR (\$1.50)

Table A continued: Least Developed Countries

<i>Economy (PTO)</i>	<i>Main lines (000), 1996</i>	<i>Teledensity, 1996</i>	<i>Line growth, 1990-96 (%)</i>	<i>Accounting rate to US, 1/6/98 (SDR per minute)</i>
Solomon Islands	7.2	1.84	8.69%	1.497 SDR (\$2.00)
Somalia	15.0	0.15	0.00%	0.973 SDR (\$1.30)
Sudan	99.0	0.36	8.11%	0.973 SDR (\$1.30)
Tanzania	92.8	0.30	4.07%	0.898 SDR (\$1.20)
Togo	24.1	0.57	14.78%	1.2 SDR
Tuvalu	0.5	5.04	27.02%	2.246 SDR (\$3.00)
Uganda	47.9	0.24	9.45%	0.674 SDR (90¢)
Vanuatu	4.5	2.57	9.45%	2.994 SDR (\$4.00)
Yemen	204.7	1.29	8.64%	1.123 SDR (\$1.50)
Zambia	77.9	0.94	3.06%	0.823 SDR (\$1.10)

Table B: Other low income economies

<i>Economy (PTO)</i>	<i>Main lines (000), 1996</i>	<i>Teledensity, 1996</i>	<i>Line growth, 1990-96 (%)</i>	<i>Accounting rate to US, 1/6/98 (SDR per minute)</i>
Albania	63.85	1.74	8.11%	0.5 SDR (67¢)
Armenia	579.50	15.40	0.57%	\$1.50/\$0.50 6/
Azerbaijan	645.07	8.52	0.66%	1.3 SDR (\$1.74)
Bosnia	325.98	8.41	n.a.	0.4 SDR (53¢)
Cameroon	70.56	0.52	9.82%	1.198 SDR (\$1.60)
China	54'947.00	4.41	41.48%	1.111 SDR (\$1.48)
Congo	22.00	0.82	5.61%	1.2 SDR (\$1.60)
Côte d'Ivoire	129.81	0.88	10.13%	1.475 SDR (\$1.97)
Georgia	567.40	10.49	0.83%	1.123 SDR (\$1.50)
Ghana	77.89	0.44	9.88%	0.749 SDR (\$1.00)
Guyana	50.19	5.99	25.25%	1.272 SDR (\$1.70)
Honduras	190.24	3.10	13.70%	0.823 SDR (\$1.10)
India	14'542.65	1.55	19.18%	1.183 SDR (\$1.58)
Kenya	261.41	0.82	6.91%	0.973 SDR (\$1.30)
Kyrgyzstan	342.02	7.47	1.43%	1.497 SDR (\$2.00)
Mongolia	92.51	3.68	5.69%	1.497 SDR (\$2.00)
Nicaragua	111.40	2.63	15.75%	0.644 SDR (\$0.86)
Nigeria	412.78	0.36	6.11%	1.123 SDR (\$1.50)
Pakistan	2'376.79	1.77	18.85%	\$1.80/\$1.00 5/
Senegal	95.07	1.11	13.56%	1.265 SDR (\$1.69)
Sri Lanka	254.50	1.39	13.13%	1.497 SDR (\$2.00)
Tajikistan	246.63	4.17	0.45%	1.42 SDR (\$1.91)
Viet Nam	1'186.37	1.58	51.39%	\$2.30,\$2.00,\$1.85&\$1.70 6/
Zimbabwe	174.99	1.47	5.96%	0.973 SDR (\$1.30)

Table C: Lower-middle income economies

<i>Economy (PTO)</i>	<i>Main lines (000), 1996</i>	<i>Teledensity, 1996</i>	<i>Line growth, 1990-96 (%)</i>	<i>Accounting rate to US, 1/6/98 (SDR per minute)</i>
Algeria	1'278.14	4.38	8.25%	0.898 SDR (\$1.2)
Belarus	2'127.97	20.76	5.15%	0.673 SDR (90¢)
Belize	29.60	13.33	9.34%	0.898 SDR (\$1.2)
Bolivia	424.94	5.60	14.98%	0.599 SDR (80¢)
Botswana	72.19	4.83	18.28%	0.599 SDR (80¢)
Bulgaria	2'647.46	31.67	3.33%	0.524 SDR (70¢)
Colombia	4'645.45	13.04	11.52%	0.749 SDR (\$1)
Costa Rica	525.68	15.47	10.97%	0.599 SDR (80¢)
Cuba	356.16	3.23	0.94%	0.898 SDR (\$1.2)
D.P.R. Korea	1'100.00	4.90	5.90%	2.35 SDR (\$3.14)
Dominica	18.74	25.23	8.27%	
Dominican Rep.	665.01	8.26	11.76%	
<i>AAC&R-Dominican Rep.</i>				24¢/22¢ & 10¢
<i>CODETEL with:</i>				
<i>AT&T</i>				0.599 SDR (80¢)
<i>MCI</i>				0.449 SDR (60¢)
<i>Sprint</i>				0.599 SDR (80¢)
<i>WorldCom</i>				0.524 SDR (70¢)
<i>ITC</i>				\$1.30/\$0.60/\$0.60 5/ 6/
<i>TRICOM</i>				0.524 SDR (70¢)
Ecuador	857.00	7.33	9.75%	0.749 SDR (\$1)
Egypt	3'024.95	4.99	11.17%	0.898 SDR (\$1.2)
El Salvador	325.26	5.61	17.28%	0.659 SDR (88¢)
Estonia	438.81	29.87	5.40%	0.55 SDR (73¢)
Fiji	70.02	8.78	8.71%	1.362 SDR (\$1.82)
Grenada	24.10	24.44	7.98%	0.606 SDR (81¢)
Guatemala	338.04	3.30	10.06%	0.629SDR (84¢)
Indonesia	4'186.03	2.11	25.60%	
<i>INDOSAT</i>				0.842 SDR (\$1.125)
<i>SATELINDO</i>				0.842 SDR (\$1.125)
Iran (I.R.)	5'824.97	9.53	17.63%	1.572 SDR (\$2.1)
Iraq	675.00	3.28	0.00%	1.497 SDR (\$2)
Jamaica	353.00	14.03	22.34%	
<i>Telecom of Jamaica</i>				0.936 SDR (\$1.25)
<i>Jamaica Digiport Int'l.</i>				0.165 SDR (22¢)
<i>Jamaica Communications</i>				0.861 SDR (\$1.15)
Jordan	345.21	6.19	5.82%	1.123 SDR (\$1.5)
Kazakhstan	1'916.59	11.59	6.23%	1.0 SDR (\$1.34)
Latvia	739.20	29.55	2.97%	0.6 SDR (80¢)
Lebanon	460.58	14.93	7.41%	1.310 SDR (\$1.75)
Lithuania	992.63	26.78	4.08%	
<i>Lithuanian Telecom</i>				0.711 SDR (95¢)
<i>Omnitel</i>				0.374SDR (50¢)

Table C (continued): Lower-middle income economies

<i>Economy (PTO)</i>	<i>Main lines (000), 1996</i>	<i>Teledensity, 1996</i>	<i>Line growth, 1990-96 (%)</i>	<i>Accounting rate to US, 1/6/98 (SDR per minute)</i>
Marshall Islands	3.38	5.92	37.49%	1.048 SDR (\$1.4)
Micronesia	8.24	7.56	22.47%	0.749 SDR (\$1)
Moldova	593.33	13.70	4.25%	1.497 SDR (\$2)
Morocco	1'251.00	4.60	20.78%	0.6 SDR (\$1.07)
Namibia	85.55	5.43	8.31%	0.861 SDR (\$1.15)
Panama	325.28	12.16	7.06%	0.763 SDR (\$1.02)
Papua New Guinea	47.00	1.07	7.66%	0.9 SDR (\$1.20)
Paraguay	176.32	3.56	7.78%	0.823 SDR (\$1.1)
Peru	1'435.15	5.99	16.83%	0.711 SDR (95¢)
Philippines	1'787.00	2.49	19.62%	
<i>Capwire</i>				0.614 SDR (82¢)
<i>Digitel</i>				0.614 SDR (82¢)
<i>ETPI</i>				0.749 SDR (\$1)
<i>Globe Telecom</i>				0.898 SDR (\$1.2)
<i>GMCR</i>				0.614 SDR (82¢)
<i>ICC Telecoms</i>				0.614 SDR (82¢)
<i>Islacom</i>				0.614 SDR (82¢)
<i>Philcom</i>				0.614 SDR (82¢)
<i>PLDT</i>				0.614 SDR (82¢)
<i>SMART</i>				0.614 SDR (82¢)
Romania	3'161.25	13.98	4.95%	0.76 SDR (\$1.01)
Russia	25'914.51	17.54	3.82%	
<i>Aerocom, Ltd.</i>				80¢ & 68¢ 6/
<i>Astelit</i>				0.86 SDR (\$1.15)
<i>Baltic Communications Ltd.</i>				0.86 SDR (\$1.15)
<i>Comstar Telecom</i>				1.84 SDR (\$2.46)
<i>Rostelcom</i>				1.048 SDR (\$1.4)
<i>Leningrad Trunk Line</i>				1.946 SDR (\$2.6)
<i>Ministry of Public Telecom</i>				1.946 SDR (\$2.6)
<i>MTUTI and W&R</i>				1.946 SDR (\$2.6)
<i>Nakhoda Telecom</i>				1.497 SDR (\$2)
<i>Ramsatcom</i>				1.579 SDR (\$2.12)
<i>Sakhalin Island</i>				1.497 SDR (\$2)
<i>Sovintel</i>				1.123 SDR (\$1.5)
<i>Zond-Sviaz</i>				0.749 SDR (\$1)
<i>Tatincom</i>				1.946 SDR (\$2.6)
<i>Teleport-TP</i>				1.579 SDR (\$2.12)
<i>Vostoktelecom</i>				1.198 SDR (\$1.6)
Slovak Republic	1'246.47	23.19	9.81%	0.5 SDR (67¢)
St. Vincent	19.35	17.12	6.69%	0.606 SDR (81¢)
Suriname	56.84	13.16	7.58%	\$2.16 & \$1.95 6/
Swaziland	22.60	2.41	8.83%	0.898 SDR (\$1.2)
Syria	1'199.00	8.20	15.83%	1.310 SDR (\$1.75)

Table C (continued): Lower-middle income economies

<i>Economy (PTO)</i>	<i>Main lines (000), 1996</i>	<i>Teledensity, 1996</i>	<i>Line growth, 1990-96 (%)</i>	<i>Accounting rate to US, 1/6/98 (SDR per minute)</i>
TFYR Macedonia	367.26	17.44	4.27%	0.7 SDR (93¢)
Thailand	4'200.16	7.00	21.21%	0.786 SDR (\$1.05)
Tonga	7.78	7.90	10.04%	1.497 SDR (\$2)
Tunisia	585.24	6.40	11.61%	0.7 SDR (93¢)
Turkmenistan	338.20	7.40	7.43%	1.25 SDR (\$1.67)
Ukraine	9'241.00	18.09	4.67%	0.973 SDR (\$1.3)
Uzbekistan	1'531.30	6.68	1.47%	1.272 SDR (\$1.7)
Venezuela	2'666.85	11.74	10.22%	0.644 SDR (86¢)
West Bank and Gaza	83.33	3.29	n.a.	n.a.
Yugoslavia	2'081.58	19.69	6.23%	0.7 SDR (93¢)

Table D: Upper middle income economies

<i>Economy (PTO)</i>	<i>Main lines (000), 1996</i>	<i>Teledensity, 1996</i>	<i>Line growth, 1990-96 (%)</i>	<i>Accounting rate to US, 1/6/98 (SDR per minute)</i>
Antigua & Barbuda	28.00	40.81	9.80%	0.606 SDR (81¢)
Argentina	6'119.56	17.38	12.08%	0.584 SDR (78¢)
Bahrain	144.39	24.12	7.42%	1.078 SDR (\$1.44)
Barbados	96.55	36.49	4.98%	0.786 SDR (\$1.05)
Brazil	15'105.89	9.57	8.21%	0.636 SDR (85¢)
Chile	2'247.98	15.59	17.37%	
<i>Bell South</i>				0.673 SDR (90¢)
<i>Chilesat</i>				0.673 SDR (90¢)
<i>CIDCOM Larga Distancia</i>				0.749 sdr (\$1.00)
<i>CTC</i>				0.673 SDR (90¢)
<i>ENTEL</i>				0.823 SDR (\$1.10)
<i>VTR Telecomunicaciones</i>				0.673 SDR (90¢)
Croatia	1'389.03	30.91	9.12%	0.4 SDR (53¢)
Gabon	35.00	3.16	9.10%	1.2 SDR (\$1.60)
Guadeloupe	170.75	39.62	6.35%	0.4 SDR (53¢)
Libya	380.00	13.52	9.54%	0.599 SDR (80¢)
Malaysia	3'771.31	17.81	15.53%	
<i>CELCOM</i>				0.524 SDR (70¢)
<i>MAXIS</i>				0.524 SDR (70¢)
<i>Mutiara</i>				0.449 SDR (60¢)
<i>Surikat Telekom Malaysia</i>				0.591 SDR (79¢)
Malta	180.61	48.30	5.87%	0.4 SDR (53¢)
Mauritius	183.86	16.22	22.08%	1.123 SDR (\$1.50)
Mayotte	6.62	6.56	15.41%	0.49 SDR (65¢)
Oman	197.69	8.59	11.18%	5.07 GF (\$2.21)
Puerto Rico	1'254.09	33.57	3.81%	n.a.
Saudi Arabia	2'003.56	10.64	8.41%	1.5/1.2 SDR (\$2.00/1.60) 5/
Seychelles	14.86	19.56	9.38%	1.123 SDR (\$1.50)
Slovenia	663.59	33.41	7.84%	0.5 SDR (67¢)
South Africa	4'258.64	10.05	4.26%	0.599 SDR (80¢)
St. Kitts and Nevis	15.64	38.16	8.27%	0.749 SDR (\$1.00)
St. Lucia	33.78	23.46	12.13%	0.606 SDR (81¢)
Trinidad & Tobago	219.55	17.37	4.88%	0.606 SDR (81¢)
Uruguay	669.03	20.89	8.27%	0.749 SDR (\$1.00)

Table E: Other high income economies

<i>Economy (PTO)</i>	<i>Main lines (000), 1996</i>	<i>Teledensity, 1996</i>	<i>Line growth, 1990-96 (%)</i>	<i>Accounting rate to US, 1/6/98 (SDR per minute)</i>
Andorra	30.96	43.61	6.27%	0.42 SDR (56¢)
Aruba	33.58	39.08	10.23%	0.569 SDR (76¢)
Bahamas	89.46	31.50	4.21%	60¢ & 30¢ 5/
Bermuda	48.52	80.68	4.47%	0.524 SDR (70¢)
Brunei Darussalam	78.79	25.83	14.48%	
<i>Jabatan Telekom</i>				0.7 SDR (93¢)
<i>DSTCom</i>				0.224 SDR (30¢)
Cyprus	366.36	55.48	6.87%	0.7 SDR (93¢)
Faroe Islands	22.86	52.68	0.02%	n.a.
French Guiana	44.18	28.87	6.43%	0.4 SDR (53¢)
French Polynesia	49.87	22.36	4.55%	1.871 SDR (\$2.50)
Greenland	21.12	37.73	4.09%	0.5 SDR (67¢)
Guam	69.92	45.79	10.20%	0.187 SDR (25¢)
Guernsey	44.03	71.60	4.57%	n.a.
Hongkong	3'451.24	54.69	5.70%	0.52 SDR (69¢)
Israel	2'539.12	44.09	7.71%	
<i>Barak</i>				0.441 SDR (59¢)
<i>Bezeq</i>				0.441 SDR (59¢)
<i>Golden Lines</i>				0.441 SDR (59¢)
Jersey	64.47	73.39	4.33%	n.a.
Kuwait	391.84	22.39	2.83%	1.15 SDR (\$1.54)
Macau	161.49	38.87	9.60%	0.898 SDR (\$1.20)
Martinique	163.31	41.62	4.97%	0.4 SDR (53¢)
Neth. Antilles	81.19	38.20	9.54%	0.569 SDR (76¢)
New Caledonia	45.57	24.11	8.21%	1.422 SDR (\$1.90)
Northern Marianas	20.98	42.81	n.a.	n.a.
Qatar	133.51	23.93	6.39%	1.497 SDR (\$2.00)
Réunion	225.85	33.88	5.65%	0.49 SDR (65¢)
Singapore	1'562.68	43.26	6.78%	0.54 SDR (72¢)
Taiwan-China	10'010.61	46.62	8.02%	0.749 SDR (\$1.00)
United Arab Emirates	738.07	32.66	10.91%	\$2.00 & \$1.30 5/
Virgin Islands (US)	59.47	56.10	3.93%	n.a.

Table F: OECD Member States

<i>Economy (PTO)</i>	<i>Main lines (000), 1996</i>	<i>Teledensity, 1996</i>	<i>Line growth, 1990-96 (%)</i>	<i>Accounting rate to US, 1/6/98 (SDR per minute)</i>
Australia	9'500	51.88	3.37%	
<i>AAP Telecom PTY</i>				0.225 SDR (030¢)
<i>OPTUS</i>				15¢ & 15¢ or less 8/
<i>Telstra</i>				0.22 SDR (29¢)
<i>AxiCorp-Primus</i>				0.150 SDR(20¢)
<i>TNS-Telegroup</i>				0.075 SDR (10¢)
Austria	3'778	46.89	2.69%	0.2 SDR (27¢)
Belgium	4'725	46.51	3.20%	0.2 SDR (29¢)
Canada	18'050	60.23	2.80%	
<i>Fonorola</i>				20¢ & 12¢ 5/
<i>Stentor</i>				20¢ & 12¢ 5/
<i>AT&T Canada/Unitel</i>				20¢ & 12¢ 5/
Czech Republic	2'817	27.31	9.62%	0.45 SDR (60¢)
Denmark	3'251	61.91	1.86%	0.2 SDR (27¢)
Finland	2'813	54.80	0.87%	
<i>Oy Finnet</i>				0.226 SDR (33¢)
<i>Telecom Finland</i>				0.3 SDR (40¢)
<i>Telivo Oy</i>				0.3 SDR (40¢)
France	32'900	56.35	2.67%	0.15 SDR (20¢)
Germany	44'100	53.77	5.55%	0.15 SDR (20¢)
Greece	5'328	50.87	5.12%	0.55 SDR (73¢)
Hungary	2'661	26.06	17.80%	0.4 SDR (53¢)
Iceland	155	57.61	2.96%	0.55 SDR (73¢)
Ireland	1'390	38.33	5.94%	0.24 SDR (32¢)
Italy	25'259	44.02	2.06%	0.24 SDR (32¢)
Japan	61'525	48.88	2.03%	
<i>International Digital</i>				0.3 SDR (40¢)
<i>Japan Telecom</i>				0.3 SDR (40¢)
<i>Kokusai Denshin Denwa</i>				0.3 SDR (40¢)
Korea (Rep.)	19'600	43.03	6.71%	
<i>DACOM</i>				0.636 SDR (85¢)
<i>Korea Telecom</i>				0.636 SDR (85¢)
<i>ONSE</i>				0.636 SDR (85¢)
Luxembourg	244	59.15	4.86%	0.2 SDR (27¢)
Mexico	8'826	9.28	8.69%	
<i>Telmex</i>				70¢ 4/
<i>Alestra</i>				70¢ 4/
Netherlands	8'431	54.04	3.30%	0.16 SDR (21¢)
New Zealand	1'782	48.40	3.27%	
<i>CLEAR</i>				0.2 SDR (27¢)
<i>TNZI</i>				0.2 SDR (27¢)
Norway	2'440	55.69	2.27%	0.16 SDR (21¢)
Poland	6'532	16.91	12.09%	0.524 SDR (70¢)
Portugal	3'724	37.48	7.75%	0.35 SDR (47¢)
Spain	15'412	39.24	3.41%	0.25 SDR (34¢)

Table F (continued): OECD Member States

<i>Economy (PTO)</i>	<i>Main lines (000), 1996</i>	<i>Teledensity, 1996</i>	<i>Line growth, 1990- 96 (%)</i>	<i>Accounting rate to US, 1/6/98 (SDR per minute)</i>
Sweden	6'032	68.21	0.52%	
<i>Tele2</i>				0.08 SDR (11¢)
<i>Tele8</i>				0.09 SDR (12¢)
<i>Telia AB</i>				0.09 SDR (12¢)
<i>Telenordia AB</i>				0.09 SDR (12¢)
Switzerland	4'546	64.21	2.40%	0.22 SDR (30¢)
Turkey	14'286	22.35	13.00%	0.55 SDR (73¢)
United Kingdom	30'677	52.19	3.22%	
<i>British Telecom</i>				0.15 & 0.1 SDR (20¢/13¢) 6/
<i>Mercury</i>				0.4 & 0.1 SDR (53¢/13¢) 6/
<i>Energis</i>				0.1 SDR (13¢)
<i>Global One</i>				0.1 SDR (13¢)
United States	170'568	64.25	3.80%	0.1 SDR (13¢)

Notes: (For all Tables)

1. The surcharge applies to operator-assisted, collect calls and is owed to the non-billing administration.
2. The surcharge applies to country direct calls and is owed to the non-billing administration.
3. The higher surcharge/s apply to operator-assisted, collect calls, the lower surcharge applies to country direct calls.
4. IMTS settlement rates vary by service classification, call location, call destination, and time of day in both countries. The rate is a simple average figure.
5. A peak/off-peak rate structure is in effect.
6. The accounting rate declines as traffic volume increases, i.e. a growth-based structure is in effect.
7. Many accounting rates are denominated in a currency other than the U.S. dollar, e.g. Special Drawing Rights (SDR) or Gold Francs (GF). In these cases, the equivalent value in U.S. dollars is also shown.
8. Asymmetric, volume sensitive termination fees are in effect from April 1, 1997 through March 31, 1998.
9. Asymmetric, volume sensitive termination fees are in effect from October 1, 1997 through September 30, 1998.

Sources: ITU World Telecommunication Indicators Database
FCC (Ken Stanley).
