

HDI rank	MDG Telephone mainlines ^a (per 1,000 people)		MDG Cellular subscribers ^a (per 1,000 people)		MDG Internet users (per 1,000 people)		Receipts of royalties and Research and development Researchers in R&D				
	1990	2002	1990	2002	1990	2002	Patents granted to residents (per million people) 2000	and licence fees (US\$ per person) 2002	and development (R&D) expenditures (% of GDP) 1996-2002 ^b	Researchers in R&D (per million people) 1990-2001 ^b	
High human development											
1	Norway	502	734	46	844	7.1	502.6	88	37.9	1.6	4,377
2	Sweden	681	736	54	889	5.8	573.1	235	169.7	4.6	5,186
3	Australia	456	539	11	640	5.9	481.7	68	15.5	1.5	3,439
4	Canada	565	635	22	377	3.7	512.8	36	54.0	1.9	2,978
5	Netherlands	464	618	5	745	3.3	506.3	177	122.1	1.9	2,572
6	Belgium	393	494	4	786	(.)	328.3	73	86.4 ^c	2.0	2,953
7	Iceland	510	653	39	906	0.0	647.9	7	0.1	3.0	6,639
8	United States	547	646	21	488	8.0	551.4	298	151.7	2.8	4,099
9	Japan	441	558	7	637	0.2	448.9	884	81.8	3.1	5,321
10	Ireland	281	502	7	763	0.0	270.9	9	63.6	1.2	2,190
11	Switzerland	574	744	18	789	5.8	351.0	188	..	2.6	3,592
12	United Kingdom	441	591	19	841	0.9	423.1	71	130.4	1.9	2,666
13	Finland	534	523	52	867	4.0	508.9	5	107.5	3.4	7,110
14	Austria	418	489	10	786	1.3	409.4	138	13.6	1.9	2,313
15	Luxembourg	481	797	2	1,061	0.0	370.0	145	274.8	..	..
16	France	495	569	5	647	0.5	313.8	174	54.2	2.2	2,718
17	Denmark	567	689	29	833	1.0	512.8	59	..	2.1	3,476
18	New Zealand	434	448	16	622	0.0	484.4	145	23.0	1.0	2,197
19	Germany	441	651	4	727	1.4	411.9	205	45.7	2.5	3,153
20	Spain	316	506	1	824	0.1	156.3	42	9.0	1.0	1,948
21	Italy	388	481	5	939	0.2	352.4	82	9.4	1.1	1,128
22	Israel	343	453	3	955	1.1	301.4	75	61.7	5.0	1,563
23	Hong Kong, China (SAR)	450	565	24	942	0.0	430.1	6	28.4 ^c	0.4	93
24	Greece	389	491	0	845	0.0	154.7	(.)	1.1	0.7	1,400
25	Singapore	346	463	17	796	0.0	504.4	27	..	2.1	4,052
26	Portugal	243	421	1	825	0.0	193.5	5	3.1	0.8	1,754
27	Slovenia	211	506	0	835	0.0	375.8	93	3.8	1.6	2,258
28	Korea, Rep. of	306	489	2	679	0.2	551.9	490	17.4	3.0	2,880
29	Barbados	281	494	0	361	0.0	111.5	0	1.9	..	..
30	Cyprus	419	688	5	584	0.0	293.7	0	3.2	0.3	400
31	Malta	360	523	0	699	0.0	303.0	54	3.2	..	96 ^d
32	Czech Republic	158	362	0	849	0.0	256.3	26	4.4	1.3	1,466
33	Brunei Darussalam	136	256	7	401 ^c	0.0	102.3 ^c	..	..	..	..
34	Argentina	93	219	(.)	178	0.0	112.0	4	0.5	0.4	684
35	Seychelles	124	269	0	553	0.0	145.2	..	..	..	..
36	Estonia	204	351	0	650	0.0	327.7	1	3.7	0.7	1,947
37	Poland	86	295 ^c	0	363	0.0	230.0	24	0.9	0.7	1,473
38	Hungary	96	361	(.)	676	0.0	157.6	18	35.3	0.9	1,440
39	Saint Kitts and Nevis	237	500	0	106	0.0	212.8	..	..	..	..
40	Bahrain	191	261	10	579	0.0	245.6	..	..	..	..
41	Lithuania	212	270	0	475	0.0	144.4	24	0.1	0.6	2,303
42	Slovakia	135	268	0	544	0.0	160.4	15	..	0.6	1,774
43	Chile	66	230	1	428	0.0	237.5	2	0.4	0.5	419
44	Kuwait	188	204	12	519	0.0	105.8	..	0.0	0.2	212
45	Costa Rica	101	251	0	111	0.0	193.1	0	0.4	0.2	530 ^d
46	Uruguay	134	280	0	193	0.0	119.0 ^c	2	0.0	0.2	276
47	Qatar	220	286	9	433	0.0	113.4	..	..	..	591 ^d
48	Croatia	172	417	(.)	535	0.0	180.4	26	19.1	1.0	1,187
49	United Arab Emirates	224	291	19	647	0.0	313.2	0
50	Latvia	234	301	0	394	0.0	133.1	40	1.5	0.4	1,078

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	1990	2002	1990	2002	1990	2002					
	51	Bahamas	274	406	8	390	0.0	192.3
52	Cuba	31	51 ^c	0	2	0.0	10.7 ^c	0	..	0.6	489
53	Mexico	65	147	1	255	0.0	98.5	1	0.5	0.4	225
54	Trinidad and Tobago	141	250	0	278	0.0	106.0	0	..	0.1	456
55	Antigua and Barbuda	253	488	0	490	0.0	128.2	0	0.0 ^c	..	..
Medium human development											
56	Bulgaria	242	368	0	333	0.0	80.8	18	0.5	0.5	1,167
57	Russian Federation	140	242	0	120	0.0	40.9	99	1.0	1.2	3,494
58	Libyan Arab Jamahiriya	48	118 ^c	0	13	0.0	22.5	..	..	..	361
59	Malaysia	89	190	5	377	0.0	319.7	..	0.5	0.4	160
60	Macedonia, TFYR	148	271	0	177	0.0	48.4	17	1.6	..	387
61	Panama	93	122	0	189	0.0	41.4 ^c	0	0.0	0.4	95
62	Belarus	154	299	0	47	0.0	81.6	35	0.1	..	1,893
63	Tonga	46	113	0	34	0.0	29.2	..	..	..	..
64	Mauritius	52	270	2	288	0.0	99.1	..	0.0	0.3	360
65	Albania	13	71	0	276	0.0	3.9	0	..	..	..
66	Bosnia and Herzegovina	..	237	0	196	0.0	26.2	0	..	..	..
67	Suriname	92	164	0	225	0.0	41.6	..	..	..	..
68	Venezuela	76	113	(.)	256	0.0	50.6	1	0.0	0.4	193
69	Romania	102	194	0	236	0.0	101.5	38	0.1	0.4	879
70	Ukraine	136	216	0	84	0.0	18.0	99	0.1	0.9	2,118
71	Saint Lucia	129	320	0	89	0.0	82.4 ^c	0	..	..	..
72	Brazil	65	223	(.)	201	0.0	82.2	0	0.6	1.1	323
73	Colombia	69	179	0	106	0.0	46.2	(.)	0.1	0.2	101
74	Oman	60	92	2	183	0.0	70.9	..	..	..	4
75	Samoa (Western)	26	57	0	15	0.0	22.2	..	..	..	..
76	Thailand	24	105	1	260	0.0	77.6	3	0.1	0.1	74
77	Saudi Arabia	77	151	1	228	0.0	64.6	(.)	0.0	..	..
78	Kazakhstan	80	130	0	64	0.0	15.7	72	0.0	0.3	716
79	Jamaica	45	169	0	533	0.0	228.4	0	2.3	..	8 ^d
80	Lebanon	155	199	0	227	0.0	117.1	0	..	..	..
81	Fiji	58	119	0	110	0.0	61.0	..	..	..	50 ^d
82	Armenia	157	143	0	19	0.0	15.8	31	..	..	1,313
83	Philippines	10	42	0	191	0.0	44.0	(.)	(.)	..	156
84	Maldives	29	102	0	149	0.0	53.4	..	12.4	..	..
85	Peru	26	66	(.)	86	0.0	93.5	(.)	0.1	0.1	229
86	Turkmenistan	60	77	0	2	0.0	1.7 ^c	0	..	..	..
87	St. Vincent & the Grenadines	124	234	0	85	0.0	59.8	0	0.0 ^c	..	..
88	Turkey	121	281	1	347	0.0	72.8	(.)	0.0	0.6	306
89	Paraguay	27	47	0	288	0.0	17.3	..	32.1	0.0	166
90	Jordan	72	127	(.)	229	0.0	57.7	..	..	6.3	1,948
91	Azerbaijan	86	113	0	107	0.0	36.9	0	..	0.4	2,799
92	Tunisia	37	117	(.)	52	0.0	51.7	..	1.7	0.5	336
93	Grenada	177	316	2	71	0.0	141.5	0	0.0 ^c	..	..
94	China	6	167	(.)	161	0.0	46.0	5	0.1	1.1	584
95	Dominica	164	304	0	120	0.0	160.3	0	0.0 ^c	..	..
96	Sri Lanka	7	47	(.)	49	0.0	10.6	0	..	0.2	191
97	Georgia	99	131	0	102	0.0	14.9	49	1.1	0.3	2,421
98	Dominican Republic	48	110	(.)	207	0.0	36.4
99	Belize	92	114	0	188	0.0	108.9	0	0.0
100	Ecuador	48	110	0	121	0.0	41.6	0	..	0.1	83

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	1990	2002	1990	2002	1990	2002	2000	2002	1996-2002 ^b	1990-2001 ^b	
101	Iran, Islamic Rep. of	40	187	0	33	0.0	48.5	4	590
102	Occupied Palestinian Territories	..	87	0	93	0.0	30.4	..	..	..	..
103	El Salvador	24	103	0	138	0.0	46.5	..	0.2	(.)	47
104	Guyana	20	92	0	99	0.0	142.2	..	45.0	..	..
105	Cape Verde	24	160	0	98	0.0	36.4	..	1.2	..	..
106	Syrian Arab Republic	41	123	0	23	0.0	12.9	3	..	0.2	29
107	Uzbekistan	69	66	0	7	0.0	10.9	16	..	..	1,754
108	Algeria	32	61	(.)	13	0.0	16.0	0	..	..	..
109	Equatorial Guinea	4	17	0	63	0.0	3.6	..	..	..	..
110	Kyrgyzstan	72	77	0	10	0.0	29.8	13	0.5	0.2	581
111	Indonesia	6	37	(.)	55	0.0	37.7	0	..	..	130 ^d
112	Viet Nam	1	48	0	23	0.0	18.5	(.)	..	..	274
113	Moldova, Rep. of	106	161	0	77	0.0	34.1	47	0.3	0.6	329
114	Bolivia	28	68	0	105	0.0	32.4	..	0.2	0.3	123
115	Honduras	17	48	0	49	0.0	25.2	(.)	0.0	..	73
116	Tajikistan	45	37	0	2	0.0	0.5	3	0.1	..	660
117	Mongolia	32	53	0	89	0.0	20.6	32	0.0 ^c	..	531
118	Nicaragua	13	32	0	38	0.0	16.8	1	..	0.1	73
119	South Africa	93	107	(.)	304	0.0	68.2	0	1.0	..	992
120	Egypt	30	110	(.)	67	0.0	28.2	1	0.5	0.2	493
121	Guatemala	21	71	(.)	131	0.0	33.3	(.)	0.0	..	103 ^d
122	Gabon	22	25	0	215	0.0	19.2	..	..	..	..
123	São Tomé and Príncipe	19	41	0	13	0.0	72.8	..	..	..	..
124	Solomon Islands	15	15	0	2	0.0	5.0	..	..	..	..
125	Morocco	16	38	(.)	209	0.0	23.6	0	0.4	..	..
126	Namibia	39	65	0	80	0.0	26.7	..	1.9	..	..
127	India	6	40	0	12	0.0	15.9	0	(.)	..	157
128	Botswana	21	87	0	241	0.0	29.7 ^c	0	..	..	..
129	Vanuatu	18	33	0	24	0.0	34.6	..	..	..	..
130	Cambodia	(.)	3	0	28	0.0	2.2	..	..	..	..
131	Ghana	3	13	0	21	0.0	7.8	0	..	..	..
132	Myanmar	2	7	0	1	0.0	0.5	..	(.) ^c	..	..
133	Papua New Guinea	8	11	0	3	0.0	13.7	..	..	..	..
134	Bhutan	4	28	0	0	0.0	14.5	..	..	..	..
135	Lao People's Dem. Rep.	2	11	0	10	0.0	2.7	..	..	..	..
136	Comoros	8	13	0	0	0.0	4.2	..	..	..	..
137	Swaziland	17	34	0	66	0.0	19.4	0	0.1	..	..
138	Bangladesh	2	5	0	8	0.0	1.5	..	(.)	..	51
139	Sudan	3	21	0	6	0.0	2.6	0	..	..	..
140	Nepal	3	14	0	1	0.0	3.4	..	..	..	..
141	Cameroon	3	7	0	43	0.0	3.8	..	..	..	3
Low human development											
142	Pakistan	8	25	(.)	8	0.0	10.3	(.)	(.)	..	69
143	Togo	3	10	0	35	0.0	41.0	..	(.) ^c	..	102
144	Congo	7	7	0	67	0.0	1.5	..	..	..	33
145	Lesotho	7	13	0	45	0.0	9.7	0	5.9	..	..
146	Uganda	2	2	0	16	0.0	4.0	0	(.)	0.8	24
147	Zimbabwe	13	25	0	30	0.0	43.0	(.)	..	..	..
148	Kenya	8	10	0	37	0.0	12.5	(.)	0.2 ^c	..	..
149	Yemen	11	28	0	21	0.0	5.1
150	Madagascar	3	4	0	10	0.0	3.5	0	(.)	0.1	15
151	Nigeria	3	5	0	13	0.0	3.5	15 ^d

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	1990	2002	1990	2002	1990	2002					
	152	Mauritania	3	12	0	92	0.0	3.7
153	Haiti	7	16	0	17	0.0	9.6
154	Djibouti	11	15	0	23	0.0	6.9	..	..	..	..
155	Gambia	7	29	0	75	0.0	18.8	0	..	..	..
156	Eritrea	..	9	0	0	0.0	2.3	..	..	..	..
157	Senegal	6	22	0	55	0.0	10.4	..	..	(.)	2
158	Timor-Leste	..	0	..	0.0	..	..	..	..	..	..
159	Rwanda	2	3	0	14	0.0	3.1	..	0.0	..	30 ^d
160	Guinea	2	3	0	12	0.0	4.6	..	(.)	..	..
161	Benin	3	9	0	32	0.0	7.4	..	(.) ^c	..	174 ^d
162	Tanzania, U. Rep. of	3	5	0	22	0.0	2.3	0	0.0	..	..
163	Côte d'Ivoire	6	20	0	62	0.0	5.5	..	(.)	..	..
164	Zambia	8	8	0	13	0.0	4.8	0	..	..	..
165	Malawi	3	7	0	8	0.0	2.6	(.)	0.0	..	..
166	Angola	8	6	0	9	0.0	2.9	..	0.3 ^c	..	..
167	Chad	1	2	0	4	0.0	1.9	..	..	..	..
168	Congo, Dem. Rep. of the	1	(.)	0	11	0.0	0.9	..	..	..	..
169	Central African Republic	2	2	0	3	0.0	1.3	..	..	..	47
170	Ethiopia	3	5	0	1	0.0	0.7	0	0.0	..	..
171	Mozambique	3	5	0	14	0.0	2.7	0	0.0 ^c	..	..
172	Guinea-Bissau	6	9	0	0	0.0	4.0	..	..	..	..
173	Burundi	1	3	0	7	0.0	1.2	..	0.0	..	21 ^d
174	Mali	1	5	0	5	0.0	2.4	..	(.) ^c	..	..
175	Burkina Faso	2	5	0	8	0.0	2.1	..	..	0.2	16
176	Niger	1	2	0	1	0.0	1.3	..	..	..	..
177	Sierra Leone	3	5	0	14	0.0	1.6	0	..	..	..
	Developing countries	29	96	(.)	101	(.)	40.9	..	0.3	0.6 ^e	384 ^f
	Least developed countries	3	7	0	10	0.0	2.8	..	(.)	..	..
	Arab States	79	81	(.)	85	0.0	28.0	..	0.2	..	..
	East Asia and the Pacific	18	142	(.)	159	(.)	60.9	..	0.5	1.6	607 ^f
	Latin America and the Caribbean	89	166	(.)	191	0.0	81.2	1	0.8	0.5 ^e	285 ^f
	South Asia	7	41	(.)	13	0.0	14.9	..	(.)	..	160 ^f
	Sub-Saharan Africa	5	15	(.)	39	0.0	9.6	..	0.1	..	..
	Central & Eastern Europe & CIS	120	226	(.)	189	0.0	71.8	30	1.7	1.0	2,289 ^f
	OECD	365	516	10	588	2.6	383.1	290	68.4	2.6	2,908 ^f
	High-income OECD	439	590	13	650	3.2	450.5	360	85.6	2.6	3,483 ^f
	High human development	290	507	10	582	2.5	382.6	253	66.4	2.6	2,890 ^f
	Medium human development	24	111	(.)	104	0.0	37.3	3	0.2	..	555 ^f
	Low human development	4	11	(.)	15	0.0	5.9	..	(.)	..	..
	High income	420	584	13	653	3.1	445.8	350	82.9	2.6	3,449 ^f
	Middle income	49	168	(.)	176	0.0	59.5	5	0.5	0.7 ^e	751 ^f
	Low income	6	28	(.)	17	0.0	13.0	..	(.)	..	..
	World	81	175	2	184	0.5	99.4	48	12.9	2.5	1,096 ^f

a. Telephone mainlines and cellular subscribers combined form an indicator for Millennium Development Goal 8; see Index to Millennium Development Goal indicators in Statistical feature 1, *The state of human development*. b. Data refer to the most recent year available during the period specified. c. Data refer to 2001. d. Data refer to a year prior to 1990. e. Data refer to 1999. f. Data refer to 1996.

Source: Columns 1-6: ITU 2004; column 7: calculated on the basis of data on patents granted to residents from WIPO 2004 and data on population from UN 2003; column 8: calculated on the basis of data on population from UN 2003 and data on receipts of royalties and licence fees from World Bank 2004f, based on data from the International Monetary Fund; columns 9 and 10: World Bank 2004f, based on data from the United Nations Education, Scientific and Cultural Organization; aggregates calculated for the Human Development Report Office by the World Bank.