

5 December 2003

By fax (2124 0420) and by post

Clerk to Panel on Information
Technology and Broadcasting
Legislative Council Secretariat
Legislative Council Building
8 Jackson Road
Central
Hong Kong

(Attn: Miss Debbie Yau)

Dear Debbie,

ITB Panel Meeting on 5 December 2003

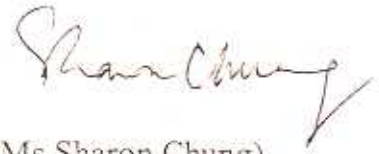
I refer to the discussion on the quality of broadband Internet access services in the above meeting this morning and enclose a press release issued by the International Telecommunication Union on 19 November 2003 on the ITU Digital Access Index (DAI) (國際電信聯盟數碼科技普及指數). In the meeting, Mrs Marion Lai, Deputy Secretary for Commerce, Industry and Technology, referred to Hong Kong's position on the index.

Covering 178 economies in the world, the DAI is the first global index to rank Information and Communication Technology access. The index combines eight variables, covering five areas, i.e. availability of infrastructure, affordability of access, education level, quality of ICT services and Internet usage.

According to the results of the DAI, Hong Kong ranks No. 7 in the world on the DAI in overall performance, No. 2 in developed Asia-Pacific and No.1 on affordability (Internet tariff as percentage of per capita income). Relevant descriptions are underlined on pages 3, 5 and 8 of the press release.

I would be grateful if you could circulate the press release for Panel Members' information. Should you have any enquiries, please contact me on Tel. No. 2961 6602.

Yours sincerely

A handwritten signature in cursive script, appearing to read "Sharon Chung". The signature is written in black ink and is positioned above the printed name.

(Ms Sharon Chung)
for Director-General
of Telecommunications

Encl

Press Release

International Telecommunication Union

For immediate release

Telephone: +41 22 730 6039

Fax: +41 22 730 5939

E-mail: pressinfo@itu.int**ITU Digital Access Index: World's First Global ICT Ranking
Education and Affordability Key to Boosting New Technology Adoption**

Geneva, 19 November 2003 The first global index to rank Information and Communication Technology (ICT) access has turned up some surprises. Slovenia ties France; and the Republic of Korea, usually not among the top ten in international ICT rankings, comes in fourth. Apart from Canada, ranked 10th, the top ten economies are exclusively Asian and European. The Digital Access Index (DAI) distinguishes itself from other indices by including a number of new variables, such as education and affordability. It also covers a total of 178 economies, which makes it the first truly global ICT ranking.

Countries are classified into one of four digital access categories: high, upper, medium and low. Those in the upper category include mainly nations from Central and Eastern Europe, the Caribbean, Gulf States and emerging Latin American nations. Many have used ICTs as a development enabler and government policies have helped them reach an impressive level of ICT access. This includes major ICT projects such as the Dubai Internet City in the United Arab Emirates (the highest ranked Arab nation in the DAI), the Multimedia Super Corridor in Malaysia (the highest ranked developing Asian nation) and the Cyber City in Mauritius (along with Seychelles, the highest ranked African nation). The DAI will be a useful tool for tracking the future advancement of these ambitious emerging economies.

The four Asian Tigers have made the greatest progress in ICTs over the last four years. The results suggest that English is no longer a decisive factor in quick technology adoption, especially as more content is made available in other languages.

The DAI forms part of the ITU's upcoming 2003 edition of the World Telecommunication Development Report (WTDR). Published to coincide with the World Summit on the Information Society (WSIS), it will be a vital reference for governments, international development agencies, non-governmental organizations and the private sector to assess national conditions in information and communications technology.

Redefining ICT potential

The results of the International Telecommunication Union's new Digital Access Index suggest that it is time to redefine ICT access potential. "Until now, limited infrastructure has often been regarded as the main barrier to bridging the Digital Divide," says Michael Minges of the Market, Economics and Finance Unit at ITU. "Our research, however, suggests that affordability and education are equally important factors." To measure the overall ability of individuals to access and use ICTs, the ITU study has gone beyond the organization's traditional focus on telecommunication infrastructure, such as mobile phones and fixed telephone lines.

For example, nearly 40 percent of Peruvians responding to a survey said they either did not have a computer or could not afford Internet services, which points to affordability as a critical success factor. Research has also shown that Internet use is closely linked to education. In China over half of all Internet users are university educated. To acknowledge such findings, the Index includes a number of new criteria, such as school enrolment and Internet tariffs as a percentage of income.

The DAI combines eight variables, covering five areas, to provide an overall country score. The areas are availability of infrastructure, affordability of access, educational level, quality of ICT services, and Internet usage. The results of the Index point to potential stumbling blocks in ICT adoption and can help countries identify their relative strengths and weaknesses.

The DAI overcomes other limitations of other ICT indices. Besides its global scope, its carefully chosen variables guarantee transparency. The DAI concentrates on factors that have an immediate impact on determining an individual's potential to access ICTs. It deliberately omits variables subject to qualitative judgment such as the regulatory environment. "Market structure and degree of competition are open to levels of interpretation," explains Minges. "We purposely exclude qualitative factors - to avoid subjective bias in the calculation."

Information Societies Need Better Tools to Set Targets, Gauge Progress

ITU's efforts to identify indicators for measuring ICT access reflects a growing trend by the international community towards the use of transparent and concrete measurements for monitoring country performance. The United Nations has adopted a set of development targets, the Millennium Development Goals (MDG) and associated indicators to monitor progress towards the reduction of poverty, hunger and other areas. Access to ICTs is included in the MDGs and laid out in Target 18: "In cooperation with the private sector make available the benefits of new technologies, specifically information and communication." The DAI provides a concrete tool to help measure this key target.

The discussion around ICT is particularly important, given the recognition that widespread access can boost economic development and improve citizens' lives. The Internet allows instant access to information from anywhere, anytime and holds major promises in improving health care, delivering education and protecting the environment. ICTs have equally been identified as a crucial tool to overcome other development goals, including the MDGs.

The complete report provides an overview of indicators used to measure access to the information society; looks at take-up of information technology in business, education and government; and examines the role between ICTs and the UN Millennium Development Goals. The WTDR will be launched in early December just prior to WSIS, at a key UN meeting on [monitoring the information society](#).

For more information contact Mr [M. Minges](#), author of the report.

Online media accreditation/registration for the Geneva Phase of WSIS is available [here](#)

[About ITU](#)

[About WSIS](#)

Digital Access Index 2002

HIGH ACCESS		UPPER ACCESS		MEDIUM ACCESS		LOW ACCESS	
Sweden	0.85	Ireland	0.69	Belarus	0.49	Zimbabwe	0.29
Denmark	0.83	Cyprus	0.68	Lebanon	0.48	Honduras	0.29
Iceland	0.82	Estonia	0.67	Thailand	0.48	Syria	0.28
Korea (Rep.)	0.82	Spain	0.67	Romania	0.48	Papua New Guinea	0.26
Norway	0.79	Malta	0.67	Turkey	0.48	Vanuatu	0.24
Netherlands	0.79	Czech Republic	0.66	TFYR Macedonia	0.48	Pakistan	0.24
Hong Kong, China	0.79	Greece	0.66	Panama	0.47	Azerbaijan	0.24
Finland	0.79	Portugal	0.65	Venezuela	0.47	S. Tom? & Principe	0.23
Taiwan, China	0.79	UAE	0.64	Belize	0.47	Tajikistan	0.21
Canada	0.78	Macao, China	0.64	St. Vincent	0.46	Equatorial Guinea	0.20
United States	0.78	Hungary	0.63	Bosnia	0.46	Kenya	0.19
United Kingdom	0.77	Bahamas	0.62	Suriname	0.46	Nicaragua	0.19
Switzerland	0.76	Bahrain	0.60	South Africa	0.45	Lesotho	0.19
Singapore	0.75	St. Kitts and Nevis	0.60	Colombia	0.45	Nepal	0.19
Japan	0.75	Poland	0.59	Jordan	0.45	Bangladesh	0.18
Luxembourg	0.75	Slovak Republic	0.59	Serbia & Montenegro	0.45	Yemen	0.18
Austria	0.75	Croatia	0.59	Saudi Arabia	0.44	Togo	0.18
Germany	0.74	Chile	0.58	Peru	0.44	Solomon Islands	0.17
Australia	0.74	Antigua & Barbuda	0.57	China	0.43	Cambodia	0.17
Belgium	0.74	Barbados	0.57	Fiji	0.43	Uganda	0.17
New Zealand	0.72	Malaysia	0.57	Botswana	0.43	Zambia	0.17
Italy	0.72	Lithuania	0.56	Iran (I.R.)	0.43	Myanmar	0.17
France	0.72	Qatar	0.55	Ukraine	0.43	Congo	0.17
Slovenia	0.72	Brunei Darussalam	0.55	Guyana	0.43	Cameroon	0.16
Israel	0.70	Latvia	0.54	Philippines	0.43	Ghana	0.16
		Uruguay	0.54	Oman	0.43	Lao P.D.R.	0.15
		Seychelles	0.54	Maldives	0.43	Malawi	0.15
		Dominica	0.54	Libya	0.42	Tanzania	0.15
				Dominican Rep.	0.42		0.15

Argentina	0.53	Tunisia	0.41	Tanzania	0.15
Trinidad & Tobago	0.53	Ecuador	0.41	Nigeria	0.15
Bulgaria	0.53	Kazakhstan	0.41	Djibouti	0.15
Jamaica	0.53	Egypt	0.40	Rwanda	0.15
Costa Rica	0.52	Cape Verde	0.39	Madagascar	0.15
St. Lucia	0.52	Albania	0.39	Mauritania	0.14
Kuwait	0.51	Paraguay	0.39	Senegal	0.14
Grenada	0.51	Namibia	0.39	Gambia	0.13
Mauritius	0.50	Guatemala	0.38	Bhutan	0.13
Russia	0.50	El Salvador	0.38	Sudan	0.13
Mexico	0.50	Palestine	0.38	Comoros	0.13
Brazil	0.50	Sri Lanka	0.38	Côte d'Ivoire	0.13
		Bolivia	0.38	Eritrea	0.13
		Cuba	0.38	D.R. Congo	0.12
		Samoa	0.37	Benin	0.12
		Algeria	0.37	Mozambique	0.12
		Turkmenistan	0.37	Angola	0.11
		Georgia	0.37	Burundi	0.10
		Swaziland	0.37	Guinea	0.10
		Moldova	0.37	Sierra Leone	0.10
		Mongolia	0.35	Central Af. Rep.	0.10
		Indonesia	0.34	Ethiopia	0.10
		Gabon	0.34	Guinea-Bissau	0.10
		Morocco	0.33	Chad	0.10
		India	0.32	Mali	0.09
		Kyrgyzstan	0.32	Burkina Faso	0.08
		Uzbekistan	0.31	Niger	0.04
		Viet Nam	0.31		
		Armenia	0.30		

Note: On a scale of 0 to 1 where 1 = highest access. DAI values are shown to hundreds of a decimal point. Countries with the same DAI value are ranked by thousands of a decimal point.

Source: ITU

Highlights of Digital Access Index (DAI), 2002

Rank	Overall	Economy	DAI	Rank	Overall	Economy	DAI
Top 5 in Sub-Saharan Africa				Top 5 in the Arab region			
1	52	Seychelles	0.54	1	34	United Arab Emirates	0.64
2	62	Mauritius	0.50	2	42	Bahrain	0.584
3	78	South Africa	0.45	3	48	Qatar	0.55
4	86	Botswana	0.43	4	60	Kuwait	0.51
5	99	Cape Verde	0.39	5	67	Lebanon	0.48

Top 10 in Americas

1	10	Canada	0.78	6	44	Antigua & Barbuda	0.57
2	11	United States	0.78	7	45	Barbados	0.57
3	37	Bahamas	0.62	8	51	Uruguay	0.54
4	38	St. Kitts and Nevis	0.60	9	53	Dominica	0.54
5	43	Chile	0.58	10	54	Argentina	0.53

Top 5 in developed Asia-Pacific

1	4	Korea (Rep.)	0.82
2	7	Hong Kong, China	0.79
3	9	Taiwan, China	0.79
4	14	Singapore	0.75
5	15	Japan	0.75

Top 5 in developing Asia-Pacific

1	46	Malaysia	0.57
2	49	Brunei Darussalam	0.55
3	68	Thailand	0.48
4	84	China	0.43
5	85	Fiji	0.43

Top 5 in Western Europe

1	1	Sweden	0.85
2	2	Denmark	0.83
3	3	Iceland	0.82
4	5	Norway	0.79
5	6	Netherlands	0.79

Top 5 in Central and Eastern Europe

1	24	Slovenia	0.72
2	26	Estonia	0.69
3	32	Czech Republic	0.66
4	36	Hungary	0.63
5	39	Poland	0.59

Top 5 gains in ranking, 1998-2002

Rank '98	Rank '02	Economy	Change
24	4	Korea (Rep.)	20
22	9	Taiwan, China	13
20	14	Singapore	6
13	7	Hong Kong, China	6
7	2	Denmark	5

Top 5 drops in ranking, 1998-2002

Rank '98	Rank '02	Economy	Change
12	21	New Zealand	-9
11	19	Australia	-8
30	36	South Africa	-6
17	23	France	-6
5	11	United States	-6

Relative to 40 economies for which data was available in 1998.

Digital Access Index Technical Note

The Digital Access Index (DAI) measures the overall ability of individuals in a country to access and use Information and Communication Technology. It consists of eight variables organized into five categories. Each variable is converted to an indicator with a value between zero and one by dividing it by the maximum value or "goalpost". Each indicator is then weighted within its category and the resulting category index

values are averaged to obtain the overall DAI value.

Category	Variable	Values for Hong Kong, China	Goal-post	Indicator	Weight	Category index
1. Infrastructure	1. Fixed telephone subscribers per 100 inhabitants	56.6 /	60 =	0.94 *	(1/2) =	0.47
	2. Mobile cellular subscribers per 100 inhabitants	91.6 /	100 =	0.92 *	(1/2) =	+ = 0.93 0.46
2. Affordability	3.1 - (Internet access price as percentage of Gross National Income per capita)	99.8 /	100 =	0.998 *	1 =	0.998
3. Knowledge	4. Adult Literacy	93.5 /	100 =	0.94 *	(2/3) =	0.62
	5. Combined primary, secondary and tertiary school enrolment level	63.05 /	100 =	0.63 *	(1/3) =	+ = 0.83 0.21
4. Quality	6. International Internet bandwidth (bits) per capita	1'867 /	10'000 =	0.88 ^a *	(1/2) =	0.44
	7. Broadband subscribers per 100 inhabitants	14.6 /	30 =	0.49 *	(1/2) =	+ = 0.68 0.24
5. Usage	8. Internet users per 100 inhabitants	43.0 /	85 =	0.51 *	1 =	0.51

Digital Access Index (Average of 5 categories above)

0.79

Note: a) Because of the large spread of values among economies, a logarithm is used to calculate this value:

$$(\text{LOG}(1?67) ?\text{LOG}(0.01)) / (\text{LOG}(10?00) ?\text{LOG}(0.01))$$

Top five economies by DAI categories, 2002

Infrastructure: Top 5 by fixed telephone subscribers per 100 inhabitants

1	Sweden	65.25
2	United States	65.02
3	Cyprus	62.44
4	Canada	61.30
5	Taiwan, China	57.45

Infrastructure: Top 5 by mobile cellular subscribers per 100 inhabitants

1	Taiwan, China	106.5
2	Luxembourg	105.4
3	Israel	95.5
4	Italy	92.5
5	Hong Kong, China	91.6

Source: ITU World Telecommunication Indicator database.

Source: ITU World Telecommunication Indicator database.

Affordability: Top 5 by Internet tariff as percentage of per capita income

1	Hong Kong, China	0.19
2	United States	0.51
3	Singapore	0.64
4	Denmark	0.68
5	Canada	0.68

Note: Calculated as cheapest price for 20 hours of Internet use per month divided by per capita income from the World Bank.

Source: ITU

Knowledge: Top by UNDP Education index

	Literacy	School enrolment	Education index
Australia	99	114	0.99
Belgium	99	107	0.99
Denmark	99	98	0.99
Finland	99	103	0.99
Netherlands	99	99	0.99
New Zealand	99	99	0.99
Norway	99	98	0.99
Sweden	99	113	0.99
United Kingdom	99	112	0.99

Note: The Education index is calculated as (2/3) times the literacy rate and (1/3) the school enrolment. Countries are shown in alphabetical order. The methodology and data are from the UNDP.

Quality: Top 5 by broadband Internet subscribers per 100 inhabitants

1	Korea (Rep.)	21.9
2	Hong Kong, China	14.6
3	Canada	11.1
4	Taiwan, China	9.4
5	Belgium	8.4

Source: ITU World Telecommunication Indicator database.

Quality: Top 5 by International Internet bandwidth (bits) per inhabitant

1	Denmark	20'284
2	Sweden	10'611
3	Netherlands	10'327
4	Switzerland	8'991
5	Belgium	8'121

Source: ITU World Telecommunication Indicator database.

Usage: Top 5 by Internet users per 100 inhabitants

1	Iceland	64.9
2	Sweden	57.3
3	Korea (Rep.)	55.2
4	United States	55.1
5	Japan	54.5

Source: ITU World Telecommunication Indicator database.