



INTERNATIONAL TELECOMMUNICATION UNION
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Telecommunication Statistics and Data Unit

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Source: Vanessa Gray
ITU

Title: New challenges, new indicators: Measuring ICT knowledge (PowerPoint presentation)



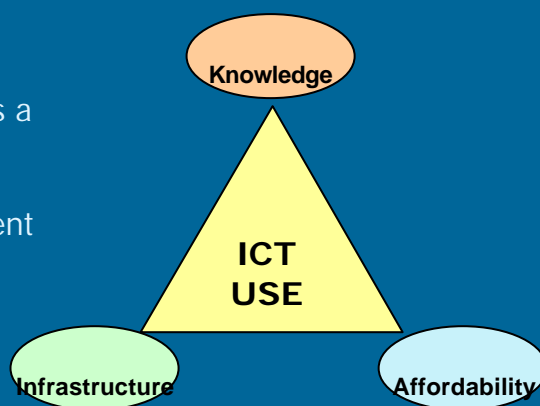
New challenges, new indicators: Measuring ICT knowledge

International Telecommunication Union (ITU)
World Telecommunication/ICT Indicators Meeting
Geneva, Switzerland
15-17 January 2003
Vanessa.Gray@itu.int



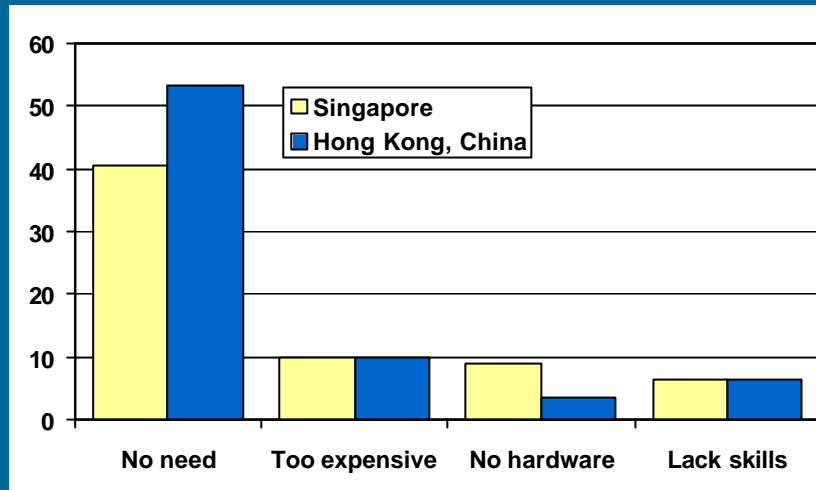
Why ICT knowledge indicators?

- Along with infrastructure and income, knowledge is a driver of ICT use and thus critical for e-readiness assessment
- Knowledge indicators help to estimate the potential size for ICT and indicate whether bottlenecks are market or social





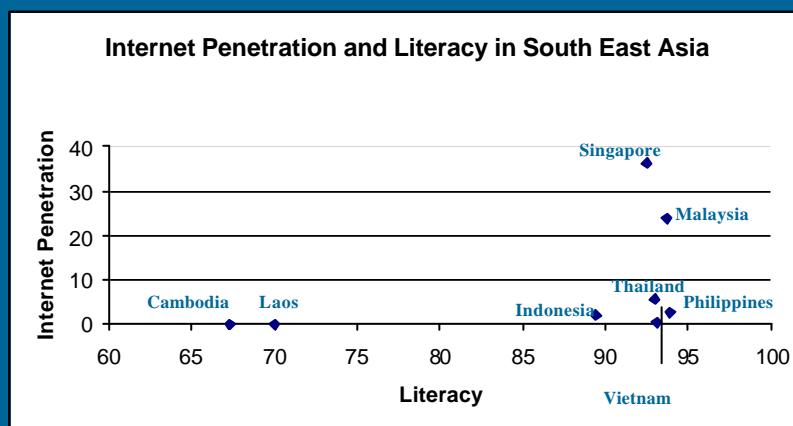
Reasons for not having Internet



Source: ITU adapted from IDA (Singapore), C&SD (Hong Kong, China) and KNSO (Korea, Rep.)



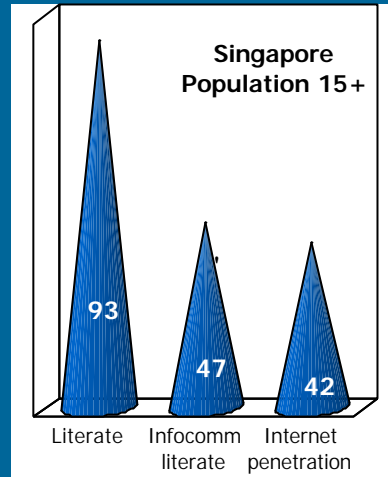
Basic literacy is a poor indicator of ICT usage





How to measure ICT knowledge?

- ICT literacy would be an ideal indicator but few countries measure this

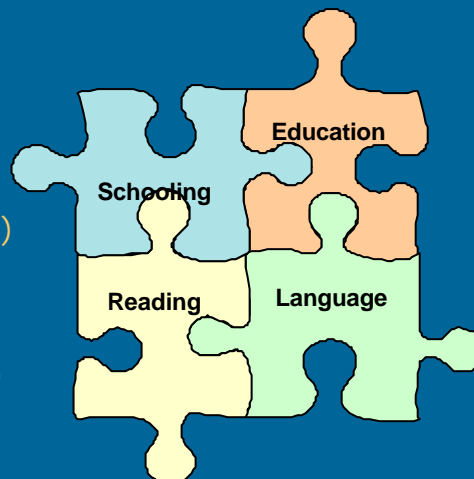


Source: IDA Singapore, [2000 Infocomm Literacy Survey](#).



Four groups of indicators

- School enrolment (3)
 - Primary
 - Secondary
 - Tertiary
- Educational attainment (3)
 - Primary
 - Secondary
 - Tertiary
- Newspaper readership (1)
- Language (2)
 - Diversity
 - Ability to understand other languages



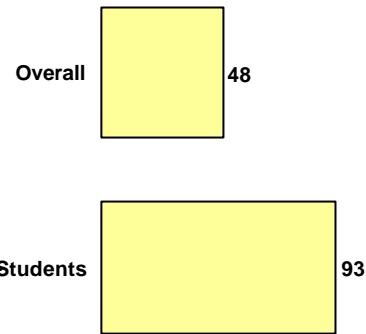


School enrolment

- Close link between school enrolment and Internet use
- Young people have highest rates of Internet penetration

Students account for 28% of all Internet users but for only 15% of the total population

% of population using Internet, 2002, Hong Kong, China



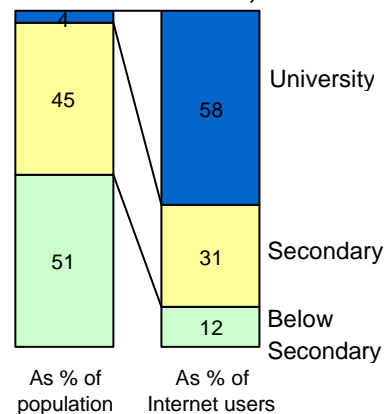
Source: ITU adapted from Census & Statistics Department, China.



Educational attainment

- Just as important as school enrolment
- Enrolment measures potential whereas attainment measures where a country is at now
- Strong link between educational attainment and Internet use

Educational attainment of Chinese Internet user, 2002

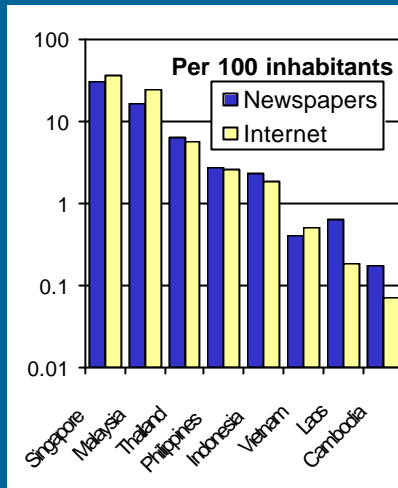


Source: ITU adapted from CNNIC, National Bureau of Statistics.



Newspaper readership

- Conventional measure is daily newspaper circulation
- Lack of information
 - UNESCO data tends to be out of date and incomplete
 - Most national statistical agencies do not collect newspaper data
 - Some advertising / newspaper associations collect newspaper data
- Ideal indicator would be ' % of population that reads a newspaper '

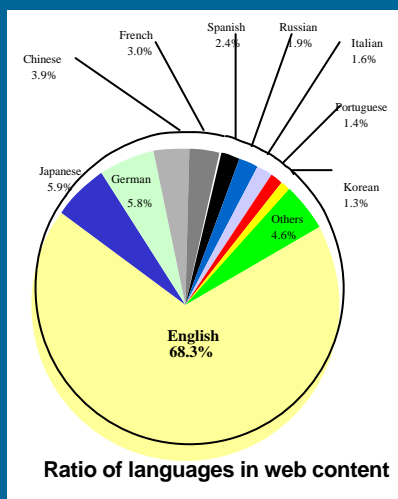


Note: Logarithmic scale. Source: ITU adapted from national statistical agencies, UNESCO, industry associations.



Language

- Ability to understand other languages
 - People not familiar with an 'Internet' language, cannot take advantage of vast amounts of content & applications
- Diversity
 - The more diversity, the less relevant single-language content will be and the harder to achieve economies of scale



Source: ITU adapted from MHPT, Japan.



Application linguistics

Language availability of Microsoft products

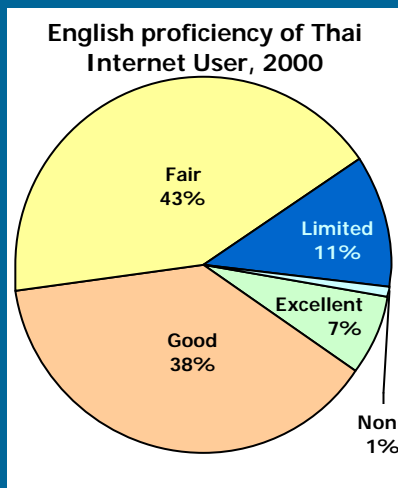
Hotmail	Messenger	Explorer
Brazilian Portuguese, Chinese (Simplified), Chinese (Traditional), English, French, German, Italian, Japanese, Korean and Spanish	Arabic, Chinese (Simplified), Chinese (Traditional), Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese (Brazilian), Portuguese (Standard), Russian, Slovak, Slovenian, Spanish, Swedish and Turkish.	Arabic, Brazilian Portuguese, Czech, Chinese (Simplified), Chinese (Traditional), Danish, Dutch, English, Finnish, French, German, Greek, Hebrew, Hungarian, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish and Turkish

No Khmer, Indonesian, Laotian, Thai, Vietnamese...



Understanding other languages

- The ability to understand an "Internet" language, especially English, enhances ICT usage
- Ability to understand popular languages also increases amount of content users can access



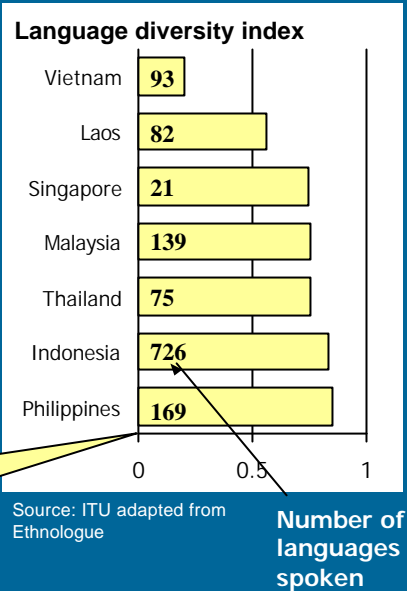
Source: ITU adapted from NECTEC, Thailand.



Diversity

- The more languages used in a country the less economy of scale in developing Internet content
- Less content available for lesser used languages

The higher the value, the less likely it is to find 2 people that speak the same language



Who compiles knowledge indicators?

- Most national statistical agencies compile some
- UNESCO compiles school enrolment and newspaper circulation but data are uneven
- Ethnologue.com compiles language statistics



Example from Singapore

Schooling	Gross Enrollment Ratio (%)	88	
	Primary	97	0.97
	Secondary	99	0.99
	Tertiary	45	0.45
Education	Educational attainment (Age 15+)		
	None	7.5	
	Primary	6.2	
	Secondary	45.1	
	Tertiary	31.3	0.31
Reading	Daily newspaper circulation per 100 population	38.4	0.38
Language	<i>Spoken (Age 5+):</i>		
	Chinese	58.8	
	English	23.0	
	Malay	14.1	
	Tamil	3.2	
	Others	0.9	
	Diversity Index	0.58	0.42
	<i>Literacy in another language:</i>		
	English	70.9	0.71
	Score		4.24/7

Source: ITU adapted from Statistics Singapore.



Conclusions

- Need to collect data on at least nine knowledge indicators, perhaps through household surveys
- Ideally, these indicators would be tied to Internet user surveys
- Governments should unify and disseminate these indicators along with traditional ICT statistics
- More work on definitions, relation to ICT take-up and international comparisons