E-READINESS IN THE ASIA-PACIFIC REGION

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Results of a survey to assess the need for ICT
training for information professionals in the region

Prepared for
UNESCO Bangkok (Communication and
Information) and Japanese Funds In Trust (JFIT)

by

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August 2006

Executive Summary

In October 2005 a survey was conducted to assess the e-readiness of 9 Asia-Pacific counties. The purpose of the survey was to gather data that would enable preliminary assessment of the need for ICT training for information professionals in the region. Representatives in China, Indonesia, Mongolia, Myanmar, New Zealand, Pakistan, Sri Lanka, Thailand and Vietnam completed the survey.

In June 2006 it was decided to extend the study to include those countries that did not respond to the initial survey. Additional responses were received from representatives in Bangladesh, Brunei Darussalam, Cambodia, India, Lao People's Democratic Republic (Laos), Malaysia and South Korea. It proved to be very difficult to get reliable informed input from library colleagues in a wider range of targeted countries.

The survey solicited responses related to telecommunication infrastructure, access to computers and the Internet, the availability of training in ICT skills and technology training, and the organisation and level of electronic resources available in libraries.

As expected the survey responses indicated significant variations in the knowledge of, and access to, the Internet and the required technology and infrastructure from country to country. They also indicated significant variations between urban and rural areas within each country. Unfortunately the responses also indicated that the infiltration of the knowledge, skills, technology and infrastructure from the urban to the rural areas is either not happening at all, or not happening as quickly as we would expect.

Based on the data collected, the following is recommended:

Recommendation 1
That comprehensive ICT training packages are developed for information professionals in the universities that build on existing ICT skills and encourage marketing, advocacy, resource sharing and further effective uses of cooperation and collaboration. It is further recommended that local advice be taken regarding the preferred language used for the training packages.

Recommendation 2
That a categorisation system is developed that identifies a series of characteristics that are relevant to e-readiness. Each country, or regions within countries where there are significant variations between urban and rural situations, will be categorised against the criteria for things such as connectivity, skills and expertise, equipment and infrastructure. This will facilitate the targeting of communications, training efforts, marketing and advocacy.

Introduction

Surveys were conducted in October 2005 and in June 2006 to assess the e-readiness of 16 Asia Pacific countries. The purpose of the survey was to gather data that would enable preliminary assessment of the need for information, communication, technology (ICT) training for information professionals in the region. Representatives in Bangladesh, Brunei Darussalam, Cambodia, China, India, Indonesia, Lao People's Democratic Republic (Laos), Malaysia, Mongolia, Myanmar, New Zealand, Pakistan, South Korea, Sri Lanka, Thailand and Vietnam completed the survey.

This survey is part of a wider effort on the part of the UNESCO ICT Group to work with each country to improve their ICT skill capability. The prerequisites are for an adequate ICT infrastructure and a capability within the population. Included in this effort was the work done by CAVAL Collaborative Solutions in 2004 when it was contracted to evaluate UNESCO's Information and Communications Technology for Librarians and Information Professionals (ICTLIP) package which was developed for use across the region to train librarians and information professionals.

The objectives of the survey are:
- To determine the infrastructure in the country including hardware and ISP
- To determine application and services including ICT in libraries
- To determine human resources including ICT literacy, ICT education and training etc.

The findings of this survey will assist UNESCO to focus its library and information educational programs to create an even playing field.

E-readiness

"A country's e-readiness is essentially a measure of its e-business environment, a collection of factors that indicate how amenable a market is to Internet-based opportunities. E-readiness is not simply a matter of the number of computer servers, websites and mobile phones in the country, but also things such as its citizen's ability to utilise technology skilfully, the transparency of its business and legal systems, and the extent to which governments encourage the use of digital technologies."[1]

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[1] Economist Intelligence Unit (2005). The 2005 e-readiness rankings: a white paper from the Economist Intelligence Unit. (http://graphics.eiu.com/files/ad_pdfs/ERR2004.pdf)

UNESCO regards e-readiness as an essential and integral part of any society that is attempting to organise itself to work towards a common goal.

The Asia-Pacific Region

The Asia-Pacific region consists of countries that vary greatly in their levels of economic development and consequently in their e-readiness. "Large populations and land mass make broad participation in the digital economy a particular challenge."[2] "The absence of a coordinating force to push digital development across the region is also a factor in the countries' e-readiness divergence."[3] The Economist Intelligence Unit 2005 ranking lists Hong Kong, Australia, Singapore and New Zealand as the region's leading countries in the e-readiness rankings. Countries such as China and India, although currently ranked low, are the largest and fastest growing consumers and producers of technology in the world.[4] McConnell's 2000 global e-readiness summary indicates that substantial improvement is needed in the conditions necessary to support e-readiness. It does however indicate that improvements are evident in connectivity (South Korea, Taiwan, Malaysia), e-leadership (India, Indonesia, Pakistan, Philippines, South Korea, Vietnam), information security (India, Philippines, South Korea, Taiwan) and human capital (Indonesia, Thailand). Government-led investments in South Korea, Taiwan and Malaysia have enabled the improvements in these countries.

Infrastructure, security, transparency, innovation and skills – must be developed and properly interlaced to ensure e-readiness.[5] The failure of a country to make progress in these areas will have an impact far beyond its borders by effectively excluding its participation in the global economy.[6] The 2006 Economist survey indicated that the e-readiness score for the Asia-Pacific region has deteriorated from 5.77 to 5.60. Generalisations at this meta level hide the wide differences within the region. A closer analysis of the countries reveal the following:

Country	2005 score	2006 score
Singapore	8.18	8.24
Malaysia	5.43	5.60
Thailand	4.56	4.63
India	4.17	4.25

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[2] McConnell International (2000) Risk e-business: seizing the opportunity of global e-readiness. (http://www.mcconnellinternational.com/ereadiness/EReadinessReport.htm)
[3] Economist Intelligence Unit (2005).
[4] Economist Intelligence Unit (2005).
[5] Economist Intelligence Unit (2005).
[6] McConnell International (2000).

Philippines	4.03	4.04
China	3.85	4.02
Sri Lanka	3.80	3.75
Indonesia	3.07	3.39
Vietnam	3.06	3.12[7]

It is clear form these figures that the variation in the region is very significant. While Singapore is ranked 13th in the world, Malaysia is the next best ranked country at 37th. It is also instructive that scores of 3 and 4 indicate that there is still a very long way to go, in order to achieve a level of comparability. "Ironically, many of these markets boast some of the largest and fastest-growing connectivity markets-Pakistan and Bangladesh each add more than 1million new mobile accounts monthly, and India twice that; Vietnam installed over 100,000 DSL lines last year. Yet developing Asia's massive population of around 3 billion people will make these developments seem drops in the digital bucket for some time."[8]

Implications for Information Professionals
Like global e-business the global information economy relies on connectivity, infrastructure and skills. Countries that lack these attributes are excluded from participating in the global exchange of information that is now possible through developments in technology and telecommunications. Similarly countries that may have these attributes in their cities often lack development in rural areas, effectively excluding significant rural populations from participation.

As an example, some of the statements of this survey's respondents indicated "Access to e-journals is still a dream"; "catalogues are not available online for external library users"; "most [libraries] use email, but almost none have web sites"; "Libraries of private companies have reliable and quick internet access but the libraries of Government are not developed";" Most libraries in the rural areas … are not yet automated"; "Almost all of the libraries don't have electronic cataloguing systems".

Two things that are critical to the establishment of the necessary connectivity, infrastructure and skills are investment in education and strong industry leadership.[9] Providing ICT education to those who do not have access to the

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[7] The scores are based on a variety of factors including Connectivity and technology infrastructure; business environment; consumer and business adoption; legal and policy environment; social and cultural environment and supporting e-services. There is no allowance for the literacy of the population in these rankings.
[8] Economist Intelligence Unit *2006 e-readiness rankings.*: 14
[9] McConnell International (2000).

necessary technology or who lack connectivity is difficult if not impossible. It is necessary however if the information professional is to have transferable skills from rural to urban areas and from country to country. This provides a challenging direction for those developing academic curricula, skills-based training courses and self-paced instructional packages. It also provides a clear role for national and regional library associations that are involved in the education and professional development of their members.

Technology developments

It seems apparent that the rapid developments in these countries will come through the adoption of broadband wireless technologies like WiFi and WiMAX. The Economist points out that "mobile internet makes sense for emerging markets, not only because the networks are quicker to roll out than fixed infrastructure, but also because developing countries are comfortable with wireless solutions".[10] In rolling out ICT training programs it would be good to bear this in mind. The focus on the access to the internet may not initially be through fixed line broadband access but wireless solutions. It is especially important to note that the mobile is the point of access of choice. This is an important consideration and filter in the key Recommendation 2 in this report.

Implications of the Survey Findings

The findings of this survey provide evidence of the imbalance of connectivity, infrastructure and skills between the cities and the rural areas in the countries surveyed. They enable country-by-country comparisons within the region of development levels and issues related to telecommunication infrastructure, access to computers and the Internet, the availability of training in ICT skills and technology training, and the organisation and level of electronic resources available in libraries.

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[10] Economist Intelligence Unit *2006 e-readiness rankings.*: 3

Survey methodology

The survey instrument was developed by CAVAL and was then tested over eight (8) versions. It was tested using advice and suggestions from a number of library colleagues with extensive but differing experience across the region of interest. *'SurveyMonkey'* was used to enable respondents to access the questionnaire via the Internet.

The country experts were identified by UNESCO and were approached by email with a covering letter from Dr Susanne Ornager inviting participation in this important survey. Those who did not respond within a short time were approached by print mail. The list was then approached again in a follow-up email round.

Unfortunately there were a number of country representatives who were unable to respond initially within the timeframe available for this project. The contract was extended to enable data to be collected from representatives in those countries that were initially not able to participate due to the timing of the survey. The availability of data from 16 countries will enable further contrast and alignment with other reports that cover the region such as McConnell International's Risk e-Business and the Economic Intelligence Unit's annual E-readiness Rankings.

Survey responses

Valid responses were received from 16 respondents. Each respondent provided data relating to their own country. Countries for which data was provided were Bangladesh, Brunei Darussalam, Cambodia, China, India, Indonesia, Lao People's Democratic Republic (Laos), Malaysia, Mongolia, Myanmar, New Zealand, Pakistan, South Korea, Sri Lanka, Thailand and Vietnam.

Following are the responses received to each question:

1. Broad area of responsibility of respondent

Bangladesh	Library – Research & Policy
Brunei Darussalam	Library - Managerial
Cambodia	Library
China	Library
India	Library
Indonesia	Library
Lao People's Democratic Republic	Library - Administrative
Malaysia	Library - Administrative
Mongolia	Managerial
Myanmar	Research & Policy
New Zealand	Library – Research & Policy
Pakistan	Library – Managerial
South Korea	Research & Policy
Sri Lanka	Library – Administrative
Thailand	Library
Vietnam	Managerial

2. Libraries in my country

Numbers of libraries in my country

	University	Technical	Public	Government	Private Companies
Bangladesh	68	45	640	17	52
Brunei Darussalam	1	6	4	254	10
Cambodia	17	33	0	18	1
China	1700	4100	2697	0	6940
India	Not known	Not known	Not known	Not known	Not known
Indonesia	1370	302	Not known	Not known	Not known
Lao People's Democratic Republic	15	10	38	343	5
Malaysia	31	7	22	146	130
Mongolia	102	1	320	1	33
Myanmar	510	204	4	Not known	>100
New Zealand	8	26	65	55	330
Pakistan	140	360	302	1300	100
South Korea	438	548	487	10,297 school libraries	Not known
Sri Lanka	15	150	700	100	50
Thailand	612	412	865	160	30
Vietnam	140	20	1900	70	0

3. Availability of telephones

People in my country have access to a private telephone:

	Daily	More than once a week
Bangladesh		X
Brunei Darussalam		X
Cambodia		X
China	X	
India	X	
Indonesia	X	
Lao People's Democratic Republic	X	
Malaysia	X	
Mongolia	X	
Myanmar	X	
New Zealand	X	
Pakistan		X
South Korea	X	
Sri Lanka	X	
Thailand	X	
Vietnam		X

69% of respondents indicated that people in their country have daily access to a private telephone. 31% of respondents indicated that people in their country have access to a private telephone more than once a week but less than daily.

4. Reliability of telephones

The telephone system is:

	Mostly very reliable	Mostly reliable	Mostly unreliable
Bangladesh		X	
Brunei Darussalam			X
Cambodia			X
China			X
India		X	
Indonesia		X	
Lao People's Democratic Republic		X	
Malaysia	X		
Mongolia		X	
Myanmar			X
New Zealand	X		
Pakistan		X	
South Korea	X		
Sri Lanka		X	
Thailand	X		
Vietnam	X		

31% of respondents indicated that their telephone system is mostly very reliable while 44% of respondents indicated that their telephone system is mostly reliable. 25% indicated that their telephone system is mostly unreliable.

5. Availability of mobile telephones

People in my country have access to a mobile telephone:

	Widely available for most of population	Available to a sizeable portion of population	Small minority with access
Bangladesh		X	
Brunei Darussalam	X		
Cambodia			X
China	X		
India		X	
Indonesia	X		
Lao People's Democratic Republic		X	
Malaysia	X		
Mongolia		X	
Myanmar			X
New Zealand	X		
Pakistan		X	
South Korea	X		
Sri Lanka		X	
Thailand		X	
Vietnam			X

81% of respondents indicated that access to a mobile telephone is either widely available for most of the population or available to a sizeable portion of the population of their country. 19% indicated that only a small minority have access to a mobile telephone.

6. and 7. Access to the Internet

Access to the Internet in capital cities, and Access speed to the Internet in capital cities:

	More than 256 kbps	Less than 256 kbps	Less than 56 kbps
Bangladesh			X
Brunei Darussalam	X		
Cambodia			X
China	X		
India			X
Indonesia	X		
Lao People's Democratic Republic			X
Malaysia	X		
Mongolia		X	
Myanmar		X	
New Zealand	X		
Pakistan	X		
South Korea	X		
Sri Lanka	X		
Thailand		X	
Vietnam	X		

56% of respondents indicated that people in their countries have access to the Internet with a speed of more than 256 kbps in their capital cities. 19% indicated that speeds of less than 256 kbps were available in their capital cities. 25% of respondents reported speeds less than 56 kbps in their capital cities.

8. Access to the Internet

Availability of ISPs (Internet Service Providers) in capital cities:

	Wide availability with full internet service	Few with full internet service	Allow only local dial-up with existing telephone lines
Bangladesh		X	
Brunei Darussalam		X	
Cambodia			X
China	X		
India			X
Indonesia	X		
Lao People's Democratic Republic			X
Malaysia		X	
Mongolia		X	
Myanmar		X	
New Zealand	X		
Pakistan		X	
South Korea	X		
Sri Lanka	X		
Thailand		X	
Vietnam		X	

31% of respondents indicated that there is a wide availability of ISPs with full Internet services in their capital cities. 50% of respondents indicated that there were few ISPs with full Internet services in their capital cities. 19% indicated that the ISPs in their capital cities allow only local dial-up with existing telephone lines.

9. Access to the Internet

Access to the Internet in the school and university libraries in capital cities is widely available:

	In most libraries	Few computers in both schools and universities	Few computers – mainly in universities
Bangladesh			X
Brunei Darussalam	X		
Cambodia			X
China	X		
India			X
Indonesia			X
Lao People's Democratic Republic			X
Malaysia	X		
Mongolia			X
Myanmar			X
New Zealand	X		
Pakistan			X
South Korea	X		
Sri Lanka		X	
Thailand	X		
Vietnam	X		

44% of respondents indicated that access to the Internet in the school and university libraries in their capital cities was available in most libraries. 50% indicated that there were few computers; mainly in university libraries and One respondent (6%) indicated that there were few computers in both schools and universities.

10. Access to the Internet

Access to the Internet in private homes in capital cities is widely available:

	In most homes	Already in many homes	Becoming more widely available	Not widely available
Bangladesh				X
Brunei Darussalam			X	
Cambodia				X
China	X			
India				X
Indonesia			X	
Lao People's Democratic Republic			X	
Malaysia	X			
Mongolia				X
Myanmar				X
New Zealand	X			
Pakistan		X		
South Korea	X			
Sri Lanka			X	
Thailand		X		
Vietnam			X	

38% of respondents indicated that access to the Internet in private homes in capital cities is available in most homes or already in many homes. 31% indicated that it is becoming more widely available and 31% indicated that it is not widely available.

11. Access to the Internet

Access to computers in the private home in capital cities is widely available:

	In most homes	Already in many homes	Becoming more widely available	Not widely available
Bangladesh			X	
Brunei Darussalam	X			
Cambodia				X
China	X			
India			X	
Indonesia			X	
Lao People's Democratic Republic			X	
Malaysia	X			
Mongolia			X	
Myanmar				X
New Zealand	X			
Pakistan			X	
South Korea	X			
Sri Lanka		X		
Thailand		X		
Vietnam			X	

44% of respondents indicated that access to computers in private homes in capital cities is available in most homes or already in many homes. 44% indicated that it is becoming more widely available and two respondents (12%) indicated that it is not widely available.

12. Access to the Internet

Access to the Internet in country areas:

	Very fast	Fast	Slow	Very slow
Bangladesh			X	
Brunei Darussalam			X	
Cambodia				X
China		X		
India				X
Indonesia			X	
Lao People's Democratic Republic			X	
Malaysia			X	
Mongolia				X
Myanmar				X
New Zealand			X	
Pakistan				X
South Korea	X			
Sri Lanka			X	
Thailand			X	
Vietnam			X	

Two respondents (12%) indicated that access to the Internet in country areas is fast or very fast. All others (88%) indicated that it is slow or very slow.

13. Access to the Internet

Access speed to the Internet in country areas:

	More than 256 kbps	Less than 256 kbps	Less than 56 kbps
Bangladesh			X
Brunei Darussalam		X	
Cambodia			X
China	X		
India			X
Indonesia			X
Lao People's Democratic Republic			X
Malaysia			X
Mongolia			X
Myanmar			X
New Zealand		X	
Pakistan			X
South Korea	X		
Sri Lanka			X
Thailand		X	
Vietnam			X

Two respondents (12%) indicated that access speed of more than 256 kbps was available in their country areas. Three respondents (19%) indicated that access speed of less than 256 kbps was available while all others (69%) indicated that access speed of less than 56 kbps was available in their country areas.

14. Access to the Internet

Availability of ISPs in country areas is:

	Wide availability with full internet service	Few with full internet service	Allow only local dial-up with existing telephone lines
Bangladesh			X
Brunei Darussalam		X	
Cambodia			X
China	X		
India			X
Indonesia			X
Lao People's Democratic Republic			X
Malaysia			X
Mongolia			X
Myanmar			X
New Zealand	X		
Pakistan			X
South Korea	X		
Sri Lanka			X
Thailand		X	
Vietnam			X

Three respondents (19%) indicated that there is a wide availability of ISPs with full Internet services in their country areas. Two respondents (12%) indicated that there were few ISPs with full Internet services in their country areas. All others (69%) indicated that the ISPs in their country areas allow only local dial-up with existing telephone lines.

15. Access to the Internet

Access to the Internet in the school and university libraries in country areas:

	In most libraries	Few computers mainly in universities	No computers in schools
Bangladesh		X	
Brunei Darussalam	X		
Cambodia			X
China	X		
India		X	
Indonesia		X	
Lao People's Democratic Republic		X	
Malaysia	X		
Mongolia		X	
Myanmar			X
New Zealand	X		
Pakistan			X
South Korea	X		
Sri Lanka			X
Thailand	X		
Vietnam		X	

38% of respondents indicated that access to the Internet in the school and university libraries in their country areas was available in most libraries. 38% indicated that there were few computers; mainly in university libraries and 24% indicated that there were no computers in schools.

16. Access to the Internet

Access to the Internet in private homes in country areas:

	In most homes	Already in many homes	Becoming more widely available	Not widely available
Bangladesh				X
Brunei Darussalam		X		
Cambodia				X
China	X			
India				X
Indonesia				X
Lao People's Democratic Republic				X
Malaysia		X		
Mongolia				X
Myanmar				X
New Zealand	X			
Pakistan				X
South Korea		X		
Sri Lanka				X
Thailand			X	
Vietnam				X

31% of respondents indicated that access to the Internet in private homes in country areas is available in most homes or is already available in many homes. One respondent (6%) indicated that it is becoming more widely available and 63% indicated that it is not widely available.

17. Access to the Internet

Access to computers in the private home in country areas:

	In most homes	Already in many homes	Becoming more widely available	Not widely available
Bangladesh				X
Brunei Darussalam	X			
Cambodia				X
China		X		
India			X	
Indonesia				X
Lao People's Democratic Republic				X
Malaysia		X		
Mongolia				X
Myanmar				X
New Zealand	X			
Pakistan				X
South Korea	X			
Sri Lanka				X
Thailand			X	
Vietnam				X

31% of respondents indicated that access to computers in private homes in capital cities is available in most homes or already in many homes. 12% indicated that it is becoming more widely available and 57% indicated that it is not widely available.

18. ICT Skills and Knowledge

Training in ICT skills in the cities:

	Many courses and opportunities at advanced level	Technical programs exist with some employers offering opportunities	Limited opportunities	Virtually non-existent
Bangladesh			X	
Brunei Darussalam		X		
Cambodia		X		
China	X			
India			X	
Indonesia			X	
Lao People's Democratic Republic			X	
Malaysia	X			
Mongolia	X			
Myanmar			X	
New Zealand	X			
Pakistan	X			
South Korea	X			
Sri Lanka	X			
Thailand		X		
Vietnam	X			

50% of respondents indicated that many courses and opportunities at advanced levels are available in their cities. 19% indicated that technical programs exist with some employers offering opportunities, while 31% indicated there were limited opportunities.

19. ICT Skills and Knowledge

Training in ICT skills in the country/rural areas:

	Many courses and opportunities at advanced level	Technical programs exist with some employers offering opportunities	Limited opportunities	Virtually non-existent
Bangladesh			X	
Brunei Darussalam		X		
Cambodia			X	
China			X	
India			X	
Indonesia				X
Lao People's Democratic Republic			X	
Malaysia		X		
Mongolia			X	
Myanmar				X
New Zealand		X		
Pakistan				X
South Korea		X		
Sri Lanka			X	
Thailand		X		
Vietnam			X	

No respondents indicated that many courses and opportunities at advanced levels are available in their country/rural areas. 31% indicated that technical programs exist with some employers offering opportunities, while 50% indicated there were limited opportunities. Three respondents (19%) indicated that training in ICT skills in the country/rural areas is virtually non-existent.

20. ICT Skills and Knowledge

ICT skills in the community in the cities:

	Widespread skills and knowledge	Growing awareness and emerging skill levels	Limited skills and knowledge	Non-existent
Bangladesh			X	
Brunei Darussalam		X		
Cambodia			X	
China	X			
India		X		
Indonesia			X	
Lao People's Democratic Republic			X	
Malaysia	X			
Mongolia			X	
Myanmar		X		
New Zealand	X			
Pakistan		X		
South Korea	X			
Sri Lanka		X		
Thailand		X		
Vietnam		X		

25% of respondents indicated that there was widespread ICT skills and knowledge in the community in their cities. 44% indicated growing awareness and emerging skill levels in the community in their cities. 31% indicated limited skills and knowledge while there were no respondents that indicated that ICT skills and knowledge in the community in their cities was non-existent.

21. ICT Skills and Knowledge

ICT skills in the community in country/rural areas:

	Widespread skills and knowledge	Growing awareness and emerging skill levels	Limited skills and knowledge	Non-existent
Bangladesh				X
Brunei Darussalam		X		
Cambodia			X	
China		X		
India		X		
Indonesia			X	
Lao People's Democratic Republic				X
Malaysia		X		
Mongolia		X		
Myanmar				X
New Zealand		X		
Pakistan				X
South Korea		X		
Sri Lanka			X	
Thailand		X		
Vietnam				X

No respondents indicated that there was widespread ICT skills and knowledge in the community in their country/rural areas. 50% indicated growing awareness and emerging skill levels. 19% indicated limited skills and knowledge and 31% indicated non-existent skills and knowledge in the community in their country/rural areas.

22. Libraries

Access to the Internet from library computers in the cities:

	In nearly all libraries	Already in Many libraries	Becoming more widely available	Not widely available
Bangladesh			X	
Brunei Darussalam		X		
Cambodia	X			
China	X			
India				X
Indonesia			X	
Lao People's Democratic Republic				X
Malaysia	X			
Mongolia		X		
Myanmar				X
New Zealand	X			
Pakistan				X
South Korea	X			
Sri Lanka		X		
Thailand	X			
Vietnam		X		

63% of respondents indicated that access to the Internet from library computers in the cities is available in nearly all libraries (38%) and already in many libraries (25%). Two respondents (12%) indicated that it is becoming more widely available while four respondents (25%) indicated that it was not widely available.

23. Libraries

Access to the Internet from library computers in the country/rural areas:

	In nearly all libraries	Already in Many libraries	Becoming more widely available	Not widely available
Bangladesh				X
Brunei Darussalam			X	
Cambodia			X	
China	X			
India				X
Indonesia				X
Lao People's Democratic Republic				X
Malaysia		X		
Mongolia				X
Myanmar				X
New Zealand		X		
Pakistan				X
South Korea	X			
Sri Lanka				X
Thailand		X		
Vietnam				X

31% of respondents indicated that access to the Internet from library computers in the cities is available in nearly all libraries (12%) and already in many libraries (19%). 12% indicated that it is becoming more widely available and 56% indicated that it was not widely available.

24. Libraries

Libraries generally provide easy and frequent access to computer terminals in cities:

	In nearly all libraries	Already in Many libraries	Becoming more widely available	Not widely available
Bangladesh				X
Brunei Darussalam		X		
Cambodia			X	
China	X			
India				X
Indonesia				X
Lao People's Democratic Republic				X
Malaysia	X			
Mongolia		X		
Myanmar				X
New Zealand	X			
Pakistan				X
South Korea	X			
Sri Lanka		X		
Thailand	X			
Vietnam			X	

50% of respondents indicated that most (31%) or many (19%) libraries generally provide easy and frequent access to computer terminals in cities. 12% indicated that it was becoming more widely available while 38% indicated that it was not widely available.

25. Libraries

Libraries generally provide easy and frequent access to computer terminals in country/rural areas:

	In nearly all libraries	Already in Many libraries	Becoming more widely available	Not widely available
Bangladesh				X
Brunei Darussalam			X	
Cambodia				X
China	X			
India				X
Indonesia				X
Lao People's Democratic Republic				X
Malaysia		X		
Mongolia				X
Myanmar				X
New Zealand			X	
Pakistan				X
South Korea	X			
Sri Lanka				X
Thailand		X		
Vietnam				X

25% of respondents indicated that most or many libraries generally provide easy and frequent access to computer terminals in country/rural areas. Two respondents (12%) indicated that it was becoming more widely available while 63% indicated that easy and frequent access to computer terminals in country/rural areas was not widely available.

26. Libraries

Libraries have reliable and quick Internet access facilities in the cities:

	In nearly all libraries	Already in Many libraries	Becoming more widely available	Not widely available
Bangladesh				X
Brunei Darussalam			X	
Cambodia		X		
China	X			
India				X
Indonesia			X	
Lao People's Democratic Republic				X
Malaysia	X			
Mongolia		X		
Myanmar				X
New Zealand	X			
Pakistan			X	
South Korea	X			
Sri Lanka			X	
Thailand		X		
Vietnam			X	

44% of respondents indicated that most (25%) or many (19%) libraries have reliable and quick Internet access facilities in the cities. 31% indicated that it was becoming more widely available while 25% indicated that it was not widely available.

27. Libraries

Libraries have reliable and quick Internet access facilities in the country/rural areas:

	In nearly all libraries	Already in Many libraries	Becoming more widely available	Not widely available
Bangladesh				X
Brunei Darussalam			X	
Cambodia				X
China	X			
India				X
Indonesia				X
Lao People's Democratic Republic				X
Malaysia		X		
Mongolia				X
Myanmar				X
New Zealand			X	
Pakistan				X
South Korea		X		
Sri Lanka				X
Thailand	X			
Vietnam				X

25% of respondents indicated that most or many libraries have reliable and quick Internet access facilities in the country/rural areas. Two respondents (12%) indicated that it was becoming more widely available while 63% indicated that it was not widely available.

28. Libraries

Generally the library's catalogue is computerised with easy points of access in the cities:

	In nearly all libraries	Already in Many libraries	Becoming more widely available	Not widely available
Bangladesh				X
Brunei Darussalam		X		
Cambodia			X	
China	X			
India				X
Indonesia			X	
Lao People's Democratic Republic				X
Malaysia	X			
Mongolia			X	
Myanmar				X
New Zealand	X			
Pakistan			X	
South Korea	X			
Sri Lanka			X	
Thailand	X			
Vietnam			X	

38% of respondents indicated that generally the library's catalogue is computerised with easy points of access in most or many libraries in the cities. 38% indicated that it is becoming more widely available while all others indicated that it is not widely available.

29. Libraries

Generally the library's catalogue is computerised with easy points of access in the country/rural areas:

	In nearly all libraries	Already in Many libraries	Becoming more widely available	Not widely available
Bangladesh				X
Brunei Darussalam			X	
Cambodia				X
China	X			
India				X
Indonesia				X
Lao People's Democratic Republic				X
Malaysia			X	
Mongolia				X
Myanmar				X
New Zealand	X			
Pakistan				X
South Korea	X			
Sri Lanka				X
Thailand		X		
Vietnam				X

25% of respondents indicated that generally the library's catalogue is computerised with easy points of access in most or many libraries in the country/rural areas. 12% indicated that it is becoming more widely available and 63% indicated that it is not widely available.

30. Libraries

Generally the library's electronic information resources are organised for easy access via the web in the cities:

	In nearly all libraries	Already in Many libraries	Becoming more widely available	Not widely available
Bangladesh				X
Brunei Darussalam		X		
Cambodia				X
China	X			
India				X
Indonesia			X	
Lao People's Democratic Republic				X
Malaysia	X			
Mongolia			X	
Myanmar				X
New Zealand	X			
Pakistan				X
South Korea	X			
Sri Lanka			X	
Thailand		X		
Vietnam			X	

38% of respondents indicated that generally the library's electronic information resources are organised for easy access via the web in most or many libraries in the cities. 25% indicated that it was becoming more widely available while all others indicated that it was not widely available.

31. Libraries

Generally the library's electronic information resources are organised for easy access via the web in the country/rural areas:

	In nearly all libraries	Already in Many libraries	Becoming more widely available	Not widely available
Bangladesh				X
Brunei Darussalam		X		
Cambodia				X
China	X			
India				X
Indonesia				X
Lao People's Democratic Republic				X
Malaysia			X	
Mongolia				X
Myanmar				X
New Zealand			X	
Pakistan				X
South Korea	X			
Sri Lanka				X
Thailand			X	
Vietnam				X

19% of respondents indicated that generally the library's electronic information resources are organised for easy access via the web in most libraries in the country/rural areas. 19% indicated that it was becoming more widely available while 62% indicated that it was not widely available.

32. Libraries

The electronic journals the average university student can gain access to through their university library would number in the cities:

	More than 400 subscribed titles	Less than 400 subscribed titles	Less than 200 subscribed titles	Less than 100 subscribed titles
Bangladesh				X
Brunei Darussalam		X		
Cambodia				X
China	X			
India				X
Indonesia				X
Lao People's Democratic Republic				X
Malaysia	X			
Mongolia				X
Myanmar				X
New Zealand	X			
Pakistan	X			
South Korea	X			
Sri Lanka	X			
Thailand	X			
Vietnam				X

44% of respondents indicated that the electronic journals the average university student can gain access to through their university library would number more than 400 subscribed titles in the cities. One respondent (6%) indicated that the average university student can gain access to less than 400 subscribed titles (but more than 200 subscribed titles) through their university library while 50% of respondents indicated the number of subscribed titles would be less than 100.

33. Libraries

The electronic journals the average university student can gain access to through their university library would number in the country/rural areas:

	More than 400 subscribed titles	Less than 400 subscribed titles	Less than 200 subscribed titles	Less than 100 subscribed titles
Bangladesh				X
Brunei Darussalam			X	
Cambodia				X
China	X			
India				X
Indonesia				X
Lao People's Democratic Republic				X
Malaysia		X		
Mongolia				X
Myanmar				X
New Zealand		X		
Pakistan				X
South Korea	X			
Sri Lanka				X
Thailand	X			
Vietnam				X

18% of respondents indicated that the electronic journals the average university student can gain access to through their university library would number more than 400 subscribed titles in the country/rural areas. Two respondents (12%) indicated that the average university student can gain access to less than 400 subscribed titles (but more than 200 subscribed titles) through their university library and one respondent (6%) less than 200 subscribed titles. 64% of respondents indicated the number of subscribed titles would be less than 100.

34. Please make any other comments which would help us understand your views on the library and its present services or any changes which are desirable for the future:

	Comment
Bangladesh	Library service both in the private and government libraries is one of the most negligible areas in our country. May be we are far behind even from our neighbouring countries. The government university libraries are comparatively better, though still they don't have any computerised library service except cataloguing some part of the collection. This catalogues are not available online for external library users. Even some of the university libraries are headed by non-professional persons. Most of the libraries are not providing Internet access when they even have limitation to provide current books and journals. Access to e-journals is still a dream, though some initiatives are recently taking to provide e-journals. In fact libraries of Bangladesh are really in vulnerable situation and have not made any mentionable progress during the last few decades. We strongly feel to take initiatives both by the government and non-government sectors to improve the condition by taking realistic policy. I suggest to train up the existing manpower and employ some qualified persons with ICT skills and help libraries by funding to make them a real knowledge gathering place rather than a storehouse of unusable books. Cheaper access to e-books and journals is also our prime desire
Brunei Darussalam	The Library services in Brunei are improving in particular with the introduction technology based resources. The government is now working on the improvement of the Schools Library system for All Colleges and Secondary Colleges. A Tender for the Project has been released.
Cambodia	The libraries in Cambodia are very poor. Most have little or no budget for purchase of any collections, except for the many NGO libraries. Most use email, but almost none have web sites. The level of skills in use of online resources is low. There are only about 5 qualified librarians in the country. We don't know the answers to the questions about Internet connectivity.
China	Knowledge service is desirable with low price

Indonesia	The current situation. Rooted from inadequate information infrastructure, lower rate of ICT literate awareness and we need long term national ICT literate policy and planning and its implementation
Lao People's Democratic Republic	The libraries of private companies have reliable and quick internet access but the libraries of Government are not developed. For example at the National Library we just have ICT service one month.
Malaysia	Malaysian libraries receive good funding and support for ICT-based development. Most libraries in the rural areas however are not yet automated. State public libraries have internet access.
Mongolia	1. Need to improve IT related skills of librarians. 2. Provide computers and related equipments for libraries in country/rural areas. 3. Support initiatives on e-library services
Myanmar	Almost all of the libraries don't have electronic cataloguing system and there are only two organizations such as British Council and USIS which are effectively run with the library software and electronic cataloguing but not in the Internet. Web cataloguing system has not been used in our country. There is not detail list of libraries in our country and I can expressed just estimating
New Zealand	Good access to broadband in the urban areas, attempts being made to expand this capacity in rural areas
Pakistan	In big cities in Pakistan good quality Internet access is becoming available but in rural areas the situation is worse. University libraries are in much better shape with good quality access to Internet and electronic resources. But more trainings specially for Libraries are needed so that those who work in Public Libraries in smaller cities could make ICT services available to their users
Sri Lanka	The government has accepted that ICT skills should spread in the rural areas too. A project on e-library is being launched with the help of World Bank. These e-libraries provide computers and Internet access
Thailand	Information resources in electronic form are available and mostly in foreign (English) language. Much needed is local content in digital form and in local language

Survey findings - Regional snapshot

Numbers of libraries

The numbers of university and public libraries in all countries surveyed is significant. The data related to the proportions of the populations that are unable to access telecommunications, computers and the Internet indicates that they reside primarily in the rural/country areas. The data also indicates that it is the university libraries that are generally able to provide the technology, infrastructure and skills required for efficient Internet access. Efforts that leverage the facilities and expertise contained within the universities to facilitate the expansion of ICT knowledge and skills into rural areas will be of significant value. This could be a 'partnering' of libraries (university, public and others), a sharing of staff expertise and collaborative purchasing/acquisition of equipment and training to name just a few possibilities. Information professionals in the universities must be taught collaborative and cooperative approaches to training, marketing, acquisitions and advocacy. It is recommended that comprehensive ICT training packages are developed for information professionals in the universities that build on existing ICT skills and encourage marketing, advocacy, resource sharing, and the effective uses of cooperation and collaboration. Language becomes and issue when developing training packages, particularly for those residing in rural areas. It is recommended that local advice be taken regarding the preferred language used for the training packages. The reshaping and expanding of existing training packages such as the ICTLIP modules would provide a suitable basis for this training.

Recommendation 1
That comprehensive ICT training packages are developed for information professionals in the universities that build on existing ICT skills and encourage marketing, advocacy, resource sharing and further effective uses of cooperation and collaboration. It is further recommended that local advice be taken regarding the preferred language used for the training packages.

Telecommunications infrastructure

People in all countries except for those in Bangladesh, Brunei Darussalam, Cambodia, Pakistan and Vietnam have daily access to a private telephone. In Bangladesh, Brunei Darussalam, Cambodia, Pakistan and Vietnam some people do not have daily access to a private telephone but do have access more than once a week. All countries have a reliable or very reliable telephone system except for Brunei Darussalam, Cambodia, China and Myanmar which have very unreliable systems.

Most people have access to a mobile telephone, with the exception of those in Cambodia, Myanmar and Vietnam where only a small minority has access.

Access to the Internet
All countries have access to the Internet in their capital cities. Other than Bangladesh, Cambodia, India, Lao People's Democratic Republic, Mongolia, Thailand and Myanmar all countries have an access speed of more than 256 kbps. In Mongolia, Thailand and Myanmar the access speed in less that 256 kbps but faster than 56 kbps. Bangladesh, Cambodia, India and Lao People's Democratic Republic have access speeds of less than 56 kbps. Only South Korea has very fast internet access, China has fast access to the Internet in rural/country areas with all other countries experiencing slow or very slow access speeds, most being less than 56 kbps.

China, Indonesia, New Zealand, South Korea and Sri Lanka have a wide availability of ISPs offering full Internet services in their capital cities. Cambodia, India and Lao People's Democratic Republic have only dial-up access using existing telephone lines in capital cities. Other countries have few ISPs offering full Internet services in their capital cities. China, New Zealand and South Korea have wide availability of ISPs offering full Internet services in their rural/country areas. Brunei Darussalam and Thailand have a few ISPs offering full Internet services in their rural/country areas with all remaining countries having ISPs that allow only local dial-up with existing telephone lines.

Access to the Internet is available in most private homes in capital cities in China, Malaysia, New Zealand and South Korea, and in many homes in Pakistan and Thailand. In the other countries it is becoming more widely available with the exception of and Bangladesh, Cambodia, India, Mongolia and Myanmar where it is not widely available. In the rural/country areas access to the Internet is available in private homes in New Zealand and China and in many homes in Brunei Darussalam, Malaysia and South Korea. It is becoming more widely available in Thailand but it is not widely available in any of the other countries surveyed.

Access to computers is available in most private homes in capital cities in China, Malaysia, New Zealand and South Korea, and in many homes in Thailand and Sri Lanka. It is becoming more widely available in Brunei Darussalam, Indonesia, Lao People's Democratic Republic, Sri Lanka and Vietnam. It is not widely available in all other countries. Most private homes in the rural/country areas in Brunei Darussalam, New Zealand and South Korea have access to computers, as do many homes in China and Malaysia. It

is becoming more widely available in India and Thailand but it is not widely available in any of the other countries surveyed.

Training in ICT skills

Many courses and opportunities at advanced level are available in capital cities in China, Malaysia, Mongolia, New Zealand, Pakistan, South Korea, Sri Lanka and Vietnam. Technical programs exist with some employers offering opportunities in Brunei Darussalam, Cambodia and Thailand however there are limited opportunities in Bangladesh, India, Indonesia, Lao People's Democratic Republic and Myanmar. In the rural/country areas there are no courses and opportunities at advanced level. In Brunei Darussalam, Malaysia, New Zealand, South Korea and Thailand technical programs exist with some employers offering opportunities. In all other countries there are limited or no opportunities.

ICT skills and knowledge in the community in the cities is widespread in Brunei Darussalam, China, Malaysia, New Zealand and South Korea. All other countries reported a growing awareness and emerging skill levels. In the rural/country areas Brunei Darussalam, India, Malaysia, New Zealand, Mongolia, South Korea and Thailand reported a growing awareness and emerging skill levels, however all other countries reported limited or non-existent skills and knowledge in rural/country communities.

Internet access from libraries

Most school and university libraries in capital cities in Brunei Darussalam, China, Malaysia, New Zealand, South Korea, Thailand and Vietnam provide access to the Internet. Access is offered mainly through university libraries in Bangladesh, Cambodia, India, Indonesia, Lao People's Democratic Republic, , Mongolia, Myanmar and Pakistan. Very few schools and university libraries provide Internet access in Sri Lanka. Most school and university libraries provide access in rural/country areas in Brunei Darussalam, China, Malaysia, New Zealand, South Korea and Thailand. Access is offered mainly through university libraries in Bangladesh, China, India, Mongolia and Thailand. There are no computers in schools in Pakistan, Sri Lanka and Myanmar.

Access to the Internet is available from nearly all libraries in the cities in Cambodia, China, Malaysia, New Zealand, South Korea and Thailand, and in many libraries in Brunei Darussalam, Mongolia, Sri Lanka and Vietnam. It is becoming more widely available in Bangladesh and Indonesia but is not widely available in India, Lao People's Democratic Republic, Myanmar and Pakistan. In the rural/country areas access to the Internet is available from nearly all libraries in China and South Korea and many in Malaysia, New Zealand and Thailand. It is not widely available in any of the other countries.

Nearly all libraries in cities in China, Malaysia, New Zealand, South Korea and Thailand provide easy and frequent access to computer terminals, as do many in Brunei Darussalam, Mongolia and Sri Lanka. It is becoming more widely available in Cambodia and Vietnam but is not widely available in Bangladesh, India, Indonesia, Lao People's Democratic Republic, Myanmar or Pakistan. In rural/country areas access to computer terminals is available from nearly all libraries in China and South Korea and many in Malaysia and Thailand. It is becoming more widely available in Brunei Darussalam and New Zealand but is not widely available in any of the other countries.

Most libraries in the cities in China, Malaysia, New Zealand and South Korea have reliable and quick Internet access facilities, as do many in Cambodia, Mongolia and Thailand. It is becoming more widely available in all other countries with the exception of Bangladesh, India, Lao People's Democratic Republic and Myanmar where it is not widely available. Most libraries in the rural/country areas of China and Thailand have reliable and quick Internet access facilities as do many in Malaysia and South Korea. It is becoming more widely available in Brunei Darussalam and New Zealand but is not widely available in any of the other countries.

Organising and providing access to library materials
Nearly all libraries in cities in China, Malaysia, New Zealand, South Korea and Thailand have computerised catalogues with easy points of access. They are becoming more widely available in all other countries with the exception of Bangladesh, India, Lao People's Democratic Republic and Myanmar where they are not widely available. Nearly all libraries in rural/country areas in China, New Zealand and South Korea have computerised catalogues with easy points of access, as do many in Thailand. They are becoming more widely available in Brunei Darussalam and Malaysia however they are not widely available in any of the other countries surveyed.

In nearly all libraries in the cities in China, Malaysia, New Zealand and South Korea the library's electronic information resources are organised for easy access via the web, as are those in many libraries in Brunei Darussalam and Thailand. This is becoming more widely available in Indonesia, Mongolia, Sri Lanka and Vietnam. It is not widely available in all other countries surveyed. In the rural/country areas in Brunei Darussalam, China and South Korea the library's electronic information resources are organised for easy access via the web. This is becoming more widely available in the rural/country areas of Malaysia, New Zealand and Thailand but is not widely available in the rural/country areas of the other countries.

The electronic journals that the average university student in the cities can gain access to through their university library is more than 400 subscribed titles in China, Malaysia, New Zealand, Pakistan, South Korea, Thailand and Sri Lanka. Students in Brunei Darussalam can access less than 400 subscribed titles but more than 200 subscribed titles. Students in the remaining countries can access fewer than 100 subscribed titles from university libraries in the cities. In the rural/country areas students can access more than 400 subscribed titles in China, South Korea and Thailand and fewer than 400 but more than 100 subscribed titles in Brunei Darussalam, Malaysia and New Zealand. Students in remaining countries can access fewer than 100 subscribed titles from their university libraries in the rural/country areas.

Recommendation 2
That a categorisation system is developed that identifies a series of characteristics that are relevant to e-readiness. Each country, or regions within countries where there are significant variations between urban and rural situations, will be categorised against the criteria for things such as connectivity, skills and expertise, equipment and infrastructure. This will facilitate the targeting of communications, training efforts, marketing and advocacy.