

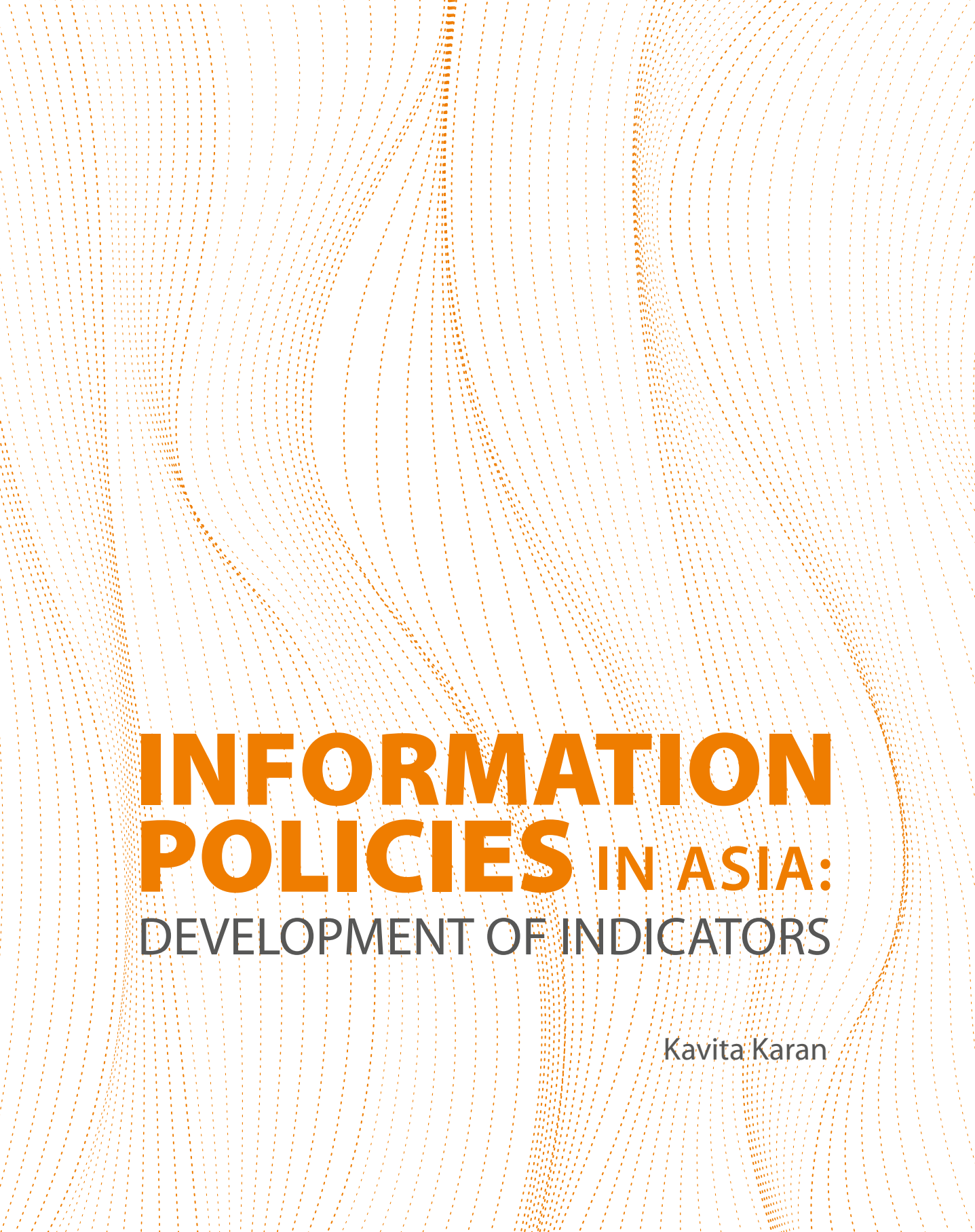


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INFORMATION POLICIES IN ASIA: DEVELOPMENT OF INDICATORS



INFORMATION POLICIES IN ASIA: DEVELOPMENT OF INDICATORS

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Foreword

UNESCO presents a broad definition of information policy consisting of the collection of policies and strategies to promote the development of an information-based society. They include statements of policy, legislation and regulations as well as programmes and initiatives designed to achieve policy goals. These policies include, but extend beyond, those that are concerned with the promotion and use of information and communication technology. These information policies are concerned primarily with the economic and social use of information. In some countries the policies also extend to the use of information in the cultural and political spheres.

How well an individual, an organization, and an entire society can harness, access, share, and make use of available information will ultimately decide their ability to generate economic growth and to enhance the quality of life for all. Several Asian countries have already undertaken the transformation to develop a National Information Policy needed to take full advantage of the opportunities that are on offer. However, this transformation will depend on the ability to integrate and apply technologies such as computer, telephone, television, electronic mail, on-line retrieval, and other multimedia. They make up what is collectively called Information and Communication Technology (ICT).

There is a need for proper co-ordination of initiatives and the avoidance of duplication. Nowhere is this approach more likely to produce returns than with information policy, since it cuts across so many different departmental responsibilities. However, this cannot be left to the market alone, because the market will be unable to guarantee that its investment in information for citizens will meet all of society's needs. The inter-relationships between the different systems are such that there is much to be gained from co-ordinated development and much to be lost from fragmentation.

Three main areas of concern can be identified for a National Information Policy: connectivity, contents and competencies. Each area needs to be dealt with in a context.

Connectivity incorporates the three areas of information networks, access and interoperability. Contents include the creation of high quality core content, ensuring its delivery, protection of the citizen and the content producer. Competencies consist of the skills for universal information literacy, the supply of information specialists, and the skills for the creation of information strategies for organizations.

The transition to information societies and knowledge-driven economies is a global phenomenon. Many of the Western countries, USA, and Asia and the Pacific have created policies to speed the process of transition, and some more countries in Asia are in the process of doing so. If other countries are to maintain their competitive position they must not lag further behind.

Governments must therefore consider their role, laws, rules, regulations, and National Policies in the Cyberspace era, so that they maximize the driving forces propelling them to fully exploit the positive benefits of the knowledge and information society, while at the same time minimizing the negative, constraining forces that risk widening the divide between the information rich and the information poor.

I would like to take this opportunity to express my gratitude to the author, Dr. Kavita Karen, Professor of Southern Illinois University, for this substantial effort.

I also thank the many experts and organizations from the Asia and Pacific region that participated in the elaboration of this paper. Special thanks go to Simon Ellis and Susanne Ornager at UNESCO Bangkok who acted as an advisory group for this report and provided valuable guidance throughout the process, along with detailed comments on the draft chapters.

I invite national actors, policy makers and organizations to take advantage of the possibilities offered by this unique diagnostic tool and hope that it will become a reference for all those committed to build information policies.



Gwang-Jo Kim
Director
UNESCO Bangkok

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**PART I:
INFORMATION POLICIES
IN ASIA: DEVELOPMENT
OF INDICATORS**

Introduction

Great emphasis is placed on interaction between governments and citizens in democratic societies where information emerges as a critical citizen resource. The conception of enlightened information policies, creation of Information and Communication Technologies (ICTs) infrastructure, and widespread deployment of new media by governments, have the potential of facilitating this interaction cost-effectively to meet the obligations of responsive and transparent governance in emerging knowledge societies.

The outcomes of progressive information policies are reflected in assessments of the e-preparedness of nations. In a number of Asian countries, such information policies have enabled e-governance/e-government to improve citizen access to government information and delivery of services. Commercially, it has meant a seamless transition to a highly networked globalized knowledge-based economy. In the context of development, the concerns have been concentrated on infrastructure and empowerment-based initiatives to bridge the digital divide, as well as to link traditionally backward communities to digital opportunities and markets. Stronger pressures are being exerted on governments today than ever before by economic, social, political, and cultural formations, within and outside national borders, to articulate clear-cut information policies to meet the varied demands of these international and national groups. Even governments with large fiscal deficits are being advised to factor in the private or public-private partnership route to resource generation in information policies rather than remain under-prepared.

The transition to an information society involves far reaching changes. Over the last decade significant changes have been witnessed in information policies even in the least developed countries. This is seen in countries that are attempting to enact proactive legislation, creating new information and communication ministries, providing state-of-the-art technologies, creating a cadre of trained professionals, expanding infrastructure to reach the grassroots, and thereby spearheading a new information revolution to build societies of the future. The Asian region presents a wide diversity. It contains some of the world's most advanced information-driven societies and those that are at the very early stages of development. Progress is encouraging, as most countries, through trial and error, have realized the importance of leveraging information for economic, social and cultural development.

Major governmental organizations, ministries and departments are spearheading and overseeing the planning of information and communication policies along with private investors as well as international partners. The implementation of such strategies also includes the related areas of legislation, infrastructure development, public-private partnerships, enabling policies, development and dissemination of content, training

of skilled persons and systematic implementation of the programmes and initiatives designed to achieve the policy goals.

Emphasis is also placed on extending the policies towards enhancing the social networks, narrowing the digital and gender divide and for transcending the rich-poor and urban-rural divide. It is important that women and other marginalized groups as well as the disabled and challenged are not left behind in the development process, and are provided with equal opportunities towards their overall empowerment. The requisite is also for understanding the special needs of indigenous people, as well as the preservation of their heritage and cultural legacies. Progress is steady, particularly in the most significant areas: from government services to healthcare to agricultural production. Over the past five years, tremendous changes have been witnessed due to many of the developing countries formulating new policies, adopting new information and communication technologies, partnering with international organizations, and creating infrastructure and opportunities to reach the grassroots. Many countries have come to recognize that successful economies are those that are operating with sound information networks in a global environment, and whether developing or advanced, it is imperative that they make the changes accordingly with the use of ICTs. Innovative and noteworthy technologies are being used with success, and others can emulate the best practices used by them.

This report on the information policy indicators reflects the key requirements for assessing national information policies, the telecommunication networks, the public-private partnerships and legislation and regulatory mechanisms that support information creation and dissemination, and the means by which they can be verified in building epistemic societies.

The Scope of this Report

The scope of information policy is broad. For the purposes of this report, information policy can be defined as the collection of policies and strategies that are designed to promote the development of a better-managed information society. These policies include, but extend beyond, those that are concerned with processes, management, promotion and use of information and communication technologies (ICTs). The need for building a knowledge-based society requires significant contributions from its stakeholders – governments, communities, businesses, civil society and international organizations among others. The role of policy makers is critical because it involves an ability to assess the demands of the stakeholders objectively, equitably and cost-effectively, and, above all, create systems of governance that ensure stability, predictability, rule of law, and fair competition that open up avenues for investments from the private sector and international organizations.

Across the Asia-Pacific region there has been a steady development in the information policies that support the information sector. This sector is expected to grow – incrementally in those countries that have been early starters, and exponentially among those who started later – if policies keep abreast of needs. As such, government initiatives are seen in the establishment of information/ICT ministries at the apex level and/or departments in others. In most of the countries of the Asia-Pacific region, the acquisition of technology, creation of infrastructure and improving the quality of human resources are significant engagements, but a lot has yet to be achieved. Lesser-developed countries like Bhutan, Lao PDR, Kazakhstan, Mongolia and Tajikistan, among others, appear to be putting together blueprints for the development of information sectors.

It may be noted that despite low levels of socio-economic development and grappling with problems of widespread poverty, social unrest, political instability and economic distress, there appears to be a desire to build and expand information systems/networks in a majority of countries through concerted government policies, infrastructure development and international support.

This report focuses on assessing country information policies on seven broad dimensions in the context of achieving the goals of information-based societies. These cover (a) overall national policies; (b) telecommunications infrastructure and networks; (c) the content and delivery of information; (d) the information industries in the public and private sectors; (e) legal and regulatory frameworks; and (f) the skills and competencies of human resources – providers and consumers.

Access to information from the World Wide Web is having both positive and negative affects on the people as it impacts on intellectual property rights, personal privacy, cyber crimes and financial fraud. Legal and regulatory frameworks need to provide security and safety of data while censorship laws are needed to build the trust and efficacy of the system. The quality of development is incomplete without citizens' participation and empowerment that is assessed by how citizens are accessing information for their personal and professional needs. The web has increased levels of communication and interaction among people across nations. Electronic government services are providing citizens' access to many services, easing their lives and increasing the transparency in countries with higher levels of corruption or lack of access to the government information. People are logging on to the internet for multiple purposes from payment of bills, taxes, applications for to buying and selling goods, booking airline tickets, healthcare, employment opportunities, education and personal development. The quality of development is incomplete without citizens' participation and empowerment that is assessed by how citizens are accessing information for their personal and professional needs.

Society's access to the internet and other new media technologies indicates its readiness to use ICTs for multiple purposes. The major hurdles that need to be reviewed are connectivity, information literacy, and the development of content in local languages. At the same time it also requires competent personnel to support the infrastructure and services. Media and computer literacy is being introduced at the school level, and information technology parks as well as centres of excellence are promoting IT research and development for training information specialists. This report reviews information policy indicators from 25 countries in Asia: Afghanistan, Bhutan, Brunei Darussalam, Bangladesh, Indonesia, India, Iran (Islamic Republic of), Japan, Kazakhstan, Kyrgyzstan, Republic of Korea, Iran (Islamic Republic of), Lao PDR, Malaysia, Mongolia, Myanmar, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Turkmenistan, Tajikistan, Uzbekistan and Viet Nam. It provides a workbook for countries to evaluate their stage of development and the means of verification that will enable them to adopt the best practices towards building knowledge-based societies. This is important, as countries need to be vigilant to change and also seek positive and successful strategies from other countries.

Organization of the Report

The report is divided into two parts where Part I covers three sections. In the first section contains the objectives and methodology of the data; the second focuses on indicators contributing to information policies across seven dimensions; and the third section concludes the report. The report provides an organizing framework that can be adapted to the needs of information policy initiatives in any given national context. The significance and results of such an analysis provide a blueprint for state interventions to promote an information-rich environment, the efficient running of government and other development projects of the country. Part II is on implementing the indicators and some examples of measurement including a questionnaire for household access to information given.

SECTION I: OBJECTIVES AND METHODOLOGY

Objectives and Framework of the Report

This report examines national information policies and an ideal approach for formulating them in the context of moving towards a knowledge-based economy in a competitive global environment. The principal objective is to present the following seven-dimensional organizing framework to assist authors of country information policies draw on the best practices in the Asia-Pacific region.

1. Overall policy and co-ordination
2. Telecommunications infrastructure
3. The information sector
4. Information and organizations
5. Information in society
6. Legal and regulatory frameworks
7. Skills and competencies

Each of these dimensions can be captured in a subset of *issues*. In each category, the *context* and *main issue/s* is briefly outlined. Then under each category a range of *key indicators* is given. Since each of these dimensions has a set of sub-indicators, the *headline indicator* is fleshed out in concrete terms. Finally, for each indicator, various *means of verification* are suggested. It should be noted that these indicators provide a framework to aid the formulation and strengthening of information policies.

The indicators are not designed to provide analysis over time, but provide a framework in moving towards information-based societies and knowledge-based economies. They help us to understand the need and readiness of human resources, the skills and

competencies required to build capacities for information processing, delivery and impact.

Most of the indicators are qualitative in nature supported by quantifiable information that can be sourced for each country. The key indicators and issues are based on a situational analysis of over 25 countries in Asia as stated above. Each category is explained for clarity and provided with the means of verification.

Categories of Indicators and Operational Definitions

1. Overall Policy and Co-ordination

The countries that have made most progress in achieving a transition to knowledge-based societies are those that have produced policy documents that objectively assess the demands of stakeholders, develop a vision of epistemic societies, identify and define objectives within the country, develop plans to overcome constraints, set timeframes, assign or raise resources, and specify measures that will be employed to achieve policy goals.

a. Main Policies and Initiatives

The successful ministries and other government organizations are those that have produced policy documents to provide a vision and mission, set out the scope of the policy framework and specify the measures that will be employed to achieve the policy goals. These include policies on Information Communication Technologies (ICTs) and e-government, open access policies, national repositories and research information policies. There are administrative structures (government ministries/departments, or autonomous bodies) in every country that address legislative, legal, policy formulation, policy implementation, regulation, legal enforcement, etc., with varying degrees of authority, autonomy and accountability. The capacity of governance is reflected in the quality of policy documents that administrative structures produce and implement. There appears to be a new dynamism in the way resource allocations have been made, policies have been reformed, and human resources upgraded to promote ICT-based information policies, even by traditional governance structures.

b. Other Policies

These are the policies that support the main policies and are aimed at ancillary development of the infrastructure, content, language, and economic and political issues related to the information sector. ICT-based information policies appear to have begun to dominate the public policy agenda within the framework of the information

economy. Public policy support has been demanded to support commercial, industrial, and service enterprises. An entire gamut of delivery of government services is expected by e-government/governance.

2. Telecommunications Infrastructure

The telecommunications infrastructure is the most important component of an information-based society. It must be possible to deliver large amounts of digital information and data quickly and securely. Further, everyone should have ready and affordable access to the telecommunications network. It must be capable of handling large volumes of traffic across the country, and cover remote far-flung habitations to meet the obligation of universal access. An independent regulatory system ensures that reasonable tariffs enable affordable access to the telecommunications network.

a. Network Development

The availability of a set of policies for the development and expansion of the telecommunications network is a starting point. In many countries it is necessary to construct the network from a very low base by extending its coverage and increasing its capacity. In other countries, maintaining the technological sophistication of an existing network to state-of-the-art level is no less a challenge because of the rapid advances in technology.

b. Public and Private Sector Roles

Developing modern telecommunications networks usually involves policies to manage the roles of the public and private stakeholders. Telecommunications infrastructures were initially created as state monopolies owing to substantial investments, ideological stances, and other reasons. Increasingly, however, the private sector has become involved in building and operating telecommunication services. Escalating demands on the system, inability of the state to make large investments in resources and technology, among others, have forced the state to give up its monopoly and reform the telecommunications sector. There are also external pressures from institutions like the World Trade Organization (WTO), which requires an open and deregulated telecommunications system as a pre-condition for membership.

c. Pricing Policy

The telecommunications pricing policy is important in making the systems accessible and affordable. The cost of provision is usually lowest in urban centres and highest in rural areas. Market forces alone, therefore, will tend to encourage low prices in urban

areas, where costs are low and competition is fiercest. Higher prices in rural areas indicate low returns that discourage private telecom providers from investing there. Most governments try, through policy, to ensure that the price of telecommunications services is broadly accessible and equal across the country.

d. Universal Access

Countries generally try to ensure that everyone has access to the telecommunications network. Geographical conditions can make the achievement of this goal difficult. Even state monopolies stumble when providing infrastructure in remote, hilly and widely dispersed areas. Policies should help to provide universal access to all citizens.

e. Regulation

Independent regulatory authorities are essential to balance the interests of all stakeholders – governments, service providers and consumers. In a state monopoly there is seldom any provision for regulation by an independent body. In a deregulated system, where competing private sector companies provide services, there is a real need for some form of independent authority.

3. The Information Sector

The information sector is an important part of a country's economy, and many countries have developed policies to support its development. The sector comprises of three broad sub-sectors: content, delivery and processing.

a. Information Content

Information content is concerned with the production and development of intellectual property as well as the reproduction of content produced by others. It includes organizations that take the raw intellectual property and process it in different ways to distribute and sell to consumers. A key issue is the role of the public sector in content creation, the language and format, and the relationship between the public and private sector in making the content accessible.

b. Information Delivery

Information delivery is the distribution of information content in physical and electronic formats. It includes booksellers, libraries, broadcasting companies, cable television networks, terrestrial and satellite broadcasters, mobile telecommunications providers, advertisers, and radio broadcasters. Also included are the providers of value-added network services – services provided through the telecommunications networks, but

which offer more than basic voice telephony: anything from information about the weather, traffic news and health information to guides to local events among others.

c. Information Processing

The third segment of the information industry is concerned with information processing in managing the content. There is an increase in the number of organizations that undertake computing and information processing function for other organizations that is resulting in increase in outsourcing and employment opportunities. This sub-sector also includes development of centres of excellence for research and consultancy as well as much of the IT industry.

4. Information and Organizations

Most countries that are transforming to knowledge-based societies try to encourage organizations in the public and private sectors to develop information-intensive ways of working. Policies cover the use of information as a resource to increase productivity, efficiency and competitiveness and, in due course, to move up the value chain. Such policies often focus specifically on the use of digital technology.

a. The Public Sector and E-government

The public sector is, in most countries, one of the foremost producers and consumers of information. There is much to be gained from using ICT to improve the efficiency with which information is processed and delivered. Many countries like China, India, Japan, Republic of Korea, Malaysia, Philippines, Singapore have developed policies and strategies to encourage this for increased transparency and efficiency. Increasingly, governments are going further by encouraging the development of e-government. This goes beyond the simple use of technology to improve information processing. It is concerned with the use of digital technology and specifically telecommunications, to enable individuals and organizations to interact and transact with the government.

b. Private Sector and E-commerce

Governments are trying to make the private sector more efficient and competitive by encouraging them to use information as a resource to diversify and increase production. For example, companies can shift or diversify from manufacturing to design and marketing. Within the context of an increasingly global economy, countries see the improved use of digital technology as an opportunity to benefit from the trend towards outsourcing, where countries in high cost regions, export data processing and other activities to countries with lower costs.

Along with e-government, it is possible to identify the development of knowledge management and e-commerce. Knowledge management includes all the activities of the organization that comprise collecting, organizing and managing its resources, innovations and people's skills, thus, helping to improve overall business performance. E-commerce covers all the transactional activities that can take place between businesses and between businesses and their customers.

5. Information in Society

In the process of developing a knowledge-based society, attention usually focuses first on the use of information within the economy: the development of the information sector and the promotion of information use within organizations. It is increasingly recognized, however, that the wider issue of information use in society is just as important if people are to network and interact.

a. Social Uses of Information

The social use of information covers the policies and measures that are concerned with the provision and use of information by individuals in their roles as citizens and as consumers. It includes people who are connecting with each other around the world by e-mails, blogs and social networking sites. The impact of such interaction can be seen in increased social cohesion, community identity and political engagement. Social networking sites like Facebook, Twitter, YouTube and MySpace are allowing for greater connectivity, particularly of the young, through messaging, videos and photographs. These sites are also becoming important for creating personal and professional networks.

However, the lack of access is leading to a greater social digital divide, particularly among the poor and those restricted by barriers of language, literacy and connectivity. Age is also a restrictive factor with a majority of the older people across the region not accessing the web at all. Policies need to be defined to overcome such barriers for improving the social interactions for an informed and connected society.

b. Overcoming the Digital Divide

This section includes the measures that are designed to support the provision to, and the use of information by marginalized groups – something that is often known as 'overcoming the digital divide.' The broad perspective also includes efforts to embrace people with special needs and disabilities so that they may become part of the development process. Emphasis is also placed on the gender divide, where social barriers deprive women and girls from access and use of IT.

6. Legal and Regulatory Framework

Legal and regulatory issues form a key part of any policy framework designed for the information sector to prosper, the information-intensive organizations to function effectively, and to support the social dimensions of the knowledge society. These include the regulations relating to intellectual property rights, data protection, access to information and censorship.

a. Intellectual Property Rights

As the world becomes more reliant on the intellectual property embodied in books, music, films, television programmes, software and databases; individuals and organizations that create it must be reassured that others can be prevented from taking advantage of it. Hence, a robust system of laws to protect intellectual property rights is essential.

The two basic elements in an intellectual property rights regime are copyright and patents. Copyright laws are framed to protect books, journals, films, music and software and patents to protect inventions. In addition, many countries now have laws that make it possible to protect trademarks, brands, designs and even the geographical origin of products.

b. Data Protection and Privacy

Data protection legislation ensures protection of personal information about individuals to protect identity theft amongst others. It provides every individual with a degree of privacy. It is a concept that was first developed within the European Union in the 1970s and is now well established across member states. Its global significance arises because the European Union legislation prevents organizations from communicating personal data to other organizations operating in countries that do not have similar levels of data protection. Any country wishing to benefit from the current trend within the European Union to outsource data processing needs to develop data protection laws.

c. Access to Information

As people and organizations make increased use of information, they expect to be able to have access to the information held by their governments and other official bodies. In many countries these rights of access are embodied in freedom of information legislation. In others, the rights are defined in codes of practice and regulations. However, in other countries like Brunei Darussalam, Iran (Islamic Republic of), Turkmenistan, China, Afghanistan and Uzbekistan, the public is denied access to the information due to lack of infrastructure or for reasons of national security.

d. Censorship

The right of a government to deny its citizens access to information was once unchallenged. It is much more contentious today and few governments rarely admit to censoring information. However, the issue has become more prominent with the spread of global communications resulting in local cultures becoming diluted or overwhelmed with information shaped by different cultural norms and values. These include websites, films, pornography, and internet control software like Net Nanny, news programmes and computer games.

7. Skills and Competencies

A knowledge-based society demands a wide range of skills. Technology savvy countries like China, India, Republic of Korea, Philippines, Singapore are benefiting from using their own information specialists, training their personnel with support from other countries for developing their internal projects and also for outsourcing several international projects thereby providing employment opportunities and increasing overall economic standards. This is a win-win situation for all countries, thereby increasing efficiency and contributing to overall employment and economy of countries.

a. Information Literacy and Information Handling Skills

Everyone needs a basic level of information literacy¹. This includes not only basic education but goes beyond the more commonly stated issue of information-technology literacy. Information literacy implies the ability to identify information needs, to search for and to gather information, the use of digital technologies and use of networks, to sift and sort, assess and evaluate the information collected, and to use it to achieve specific goals. Everyone living in a knowledge society requires skills in information sourcing and its multiple uses. As society becomes more information-intensive, lack of media literacy becomes a severe disadvantage, leading to social exclusion (Helsper, 2008).

Many countries across Asia, therefore, have developed policies to ensure that there is a basic level of information literacy throughout society. In addition to this, many people within a society will need more advanced but still general information-handling skills. These skills required by professions like teachers, managers, doctors and lawyers will enable them to make the best use of information in their daily work. UNESCO (2008) lists the skills and competencies in the information literacy continuum from basic to

1 For a discussion of information literacy, see *Towards information literacy indicators* (2008) and Ana Maria Ramalho Correia (2002) *Information literacy for an active and effective citizenship: a White paper prepared for UNESCO and others*. The Information Literacy Meeting of Experts, Prague, The Czech Republic. (<http://www.nclis.gov/libinter/infolitconf&meet/papers/correia-fullpaper.pdf>).

high levels, from definition and articulation of information needs, location and access of information, assessment and organization, and ethical use of information.

b. Information Specialists

Finally, the skills that are required by information specialists will create information products and services, organize the information into databases and libraries, communicate the information to others and work as information consolidators, processing information on behalf of other people. They include librarians, database administrators, journalists, editors and news and information technology consultants.

Methodology

This report evaluates each of these seven categories individually as well as together. The information policy structures and practices in 28 Asian countries² were reviewed to create a holistic picture used in defining key indicators for each category, and the means of verification for the existence of an information or knowledge-based environment in each country.

This analysis is based on the following assumptions in selecting information policy indicators:

- Use quantitative measurements whenever possible;
- Select indicators where measureable data is sufficiently reliable in quality to permit confident decision-making;
- Disaggregate indicators by gender or other population characteristics;
- Ensure that indicators address one key issue at a time; and
- Maximize cost and time for collecting measureable data.

The present analysis is based on data that will change over time given the rapidly shifting communications environment. The indicators are more generic in nature. However, some areas are accorded greater importance given the levels of verification and success in the countries concerned. In terms of measurement, some indicators offer a more solid means of verification, while others may not be exactly verified, but are equally important. Indicators are based upon qualitative or subjective assessments with a supporting narrative explaining how they have been designed.

² Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, India, Indonesia, Iran (Islamic Republic of), Japan, Kazakhstan, Democratic People's Republic of Korea, Republic of Korea, Kyrgyzstan, Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Tajikistan, Thailand, Turkmenistan, Uzbekistan and Viet Nam.

Making Indicators Gender-sensitive

The UNDP *Guide to Measuring the Impact of Right to Information Programs* outlines key considerations for making right to information indicators gender-sensitive and pro-poor (UNDP 2006, pp.11-12). The guide notes that: formal equality of men and women before the law may conceal differences in actual equality;

- Information systems geared to traditionally define citizenship rights may exclude women, especially in societies where women's access to the public sphere is restricted;
- Women's voices must be integrated into monitoring and evaluation from the start.

SECTION II: DIMENSIONS OF INFORMATION POLICY

1. The Overall Scope of the Information Policy and Co-ordination

A comprehensive information policy should aim to achieve information-leveraged social, political, economic and cultural development within country and region. Information strategies emerging out of a sustained dialogue among all possible stakeholders and resulting in strong consensus for overall development are a priority. Policies for the expansion of infrastructure, universal access to networks, enhanced information literacy and the promotion of e-government and e-commerce through the use of Information and Communication Technologies (ICTs) as an enabler of social and economic development, are a priority too. The overall scope of an information policy is inclusive and dependent on the levels of education, media literacy, the scientific development, the telecommunication policies and infrastructure, the technological development and the economy of the country. The provision of such an information policy will influence governance, agricultural and industrial development, health, tourism and generate employment.

Time-bound achievable goals with multi-level monitoring systems must feature in the planning frameworks that attempt to build societies of the future. Modern regulatory mechanisms are needed to facilitate convergence of information, computing media and communication technologies. The national telecommunication policies should also include sub-policies for infrastructure development, e-government, e-commerce, legislation and universal access as investment in human resources is required to upgrade knowledge and skill-sets to match policy formulation and implementation, as well as service delivery.

In recent years, a steady development in information policies has been noticed across the region. This is an encouraging sign as in countries like China, India, Japan and Singapore, where the policy documents contain statements with concise areas of focus and reveal a clear vision of the future in technological development. It is worth considering the short and long-term policies and the goals in the technology development national plans of these countries, and if they have been revised and reformulated. ICTs are not difficult to procure, absorb and adapt and investment in such technologies automatically opens up the possibilities for commercial support and a healthy competitive business environments both in the private and public sector.

Countries that have continuously reviewed and redesigned their plans have met with success at various levels. Among the most developed countries with information policies are China, Japan, Singapore and Republic of Korea. While Japan is moving towards anything-anytime-anywhere access with complete assurance driven by the *u-Japan Policy Package*, Singapore's *Singapore ONE* and Korea's informatization policies have a holistic coverage. In 2006, the Chinese government mapped *The State Informatization Development Strategy 2006-2020* with meticulous care to set forth China's goals, tasks, plans and policies in information development for the next 15 years.

Table 1: The Overall Scope of Information Policy and Co-ordination

Indicators	Means of Verification
1. Information Policies are well defined through national ministries to oversee the development of infrastructure, telecommunication networks and literacy.	• The country has a national body or authority that is in charge of developing and overseeing the planning and implementation of policies relating to information, communications and knowledge management. • Specialized ministries and departments nurture the use of ICTs across the country with different degrees of empowerment. Policies are being implemented and monitored.
2. The country has an overall vision and mission for the development of a knowledge society.	• There is a vision or mission statement in the annual national strategic plan on building a knowledge society. • A list of existing policies, available acts and projects that are envisaged as part of the mission of the country.
3. Acts, policies, laws, orders, notifications and other action enabling documents of the country/governments for infrastructure development.	A policy document like an act, statement or order that has been passed by the parliament/central or state government for the development of infrastructure in specific areas of the information sector.
4. The country has set goals for the levels of achievement in specific time periods, like five or ten year plans.	The plan sets out clear realistic targets for meeting the goals as per plans

Indicators	Means of Verification
5. The country has a policy to prioritize the use of ICTs, in terms of infrastructure development and telecommunication services.	Policies, guidelines, recommendations and incentives to prioritize and encourage the completion of projects based on needs.
6. Efforts being made towards use of computers in government, NGOs and other private organizations.	Trends in the numbers of computers in use by government, educational institutions, NGOs and other organizations. Success stories and reports, if available.
7. The information policies cover legal and regulatory frameworks that support the implementation of information policies.	• Policies cover laws and regulatory frameworks for easing the process of development for information related businesses, infrastructure development and use of new technologies. The number, scope and coverage of the existing policies. The country is benchmarking best practices in planning, implementation and evaluation of ICT-based initiatives. List of certain exemptions, taxes for such enterprises. • There is industry self-regulation to promote accountability and responsibility.
8. The universal right of citizens to access information is guaranteed in law and respected in practice.	Existence of access to information act and the number of people making use of the act per year. Percentage of cases where people are restricted and the presence of any law or policy on right to information that accords to international standards.
9. Freedom of expression is guaranteed in law and respected in practice.	• Evidence of freedom of expression, absence of rulings against free speech. • Any law or policy on right to free expression that accords with international standards and accepted international practice.
10. Editorial independence is guaranteed in law and respected in practice.	Diversity of ownership of the media and the role of state regulations/mechanisms for editorial control.
11. Active policies for training of information specialists as investment towards social and economic progress.	Numbers of citizens trained per year in IT and related specializations.
12. Active policies for a well informed society by providing timely, accurate and comprehensive information and data on all issues affecting people's lives and living.	• Measure of qualitative information provided. • Policies that have led to good information and knowledge management practices. • Number of official web pages on government services. • Delay (if any) between public announcement and posting on the web.
13. Equity. Clear evidence that public information policy acknowledges the needs of minorities, language groups, are gender sensitive and otherwise non-discriminatory.	Numbers of people from marginalized communities using libraries, accessing/reading news services, and accessing the internet by year.

2. Telecommunications Infrastructure

Telecommunications infrastructure helps develop knowledge-based societies by enabling large amounts of digital data to flow instantly and securely. Ready and affordable access to telecommunications networks is critical to development. At the same time, the need is to include people who are denied ICT access, particularly those with social exclusion and physical disabilities. Five key issues generally engage national decision-making in telecommunications. They are: network development; the respective roles of public and private players in building infrastructure and providing services; market forces that determine access and tariffs; policies that address universal access; and more importantly independent regulatory mechanisms that balance smooth operations and the interests of consumers, providers, governments and other stakeholders.

State-of-the-art telecommunications networks are the prerequisite for knowledge societies before any ICT-enabled services can be envisioned, planned, implemented, and accessed reliably and efficiently. The economies of Asia are experiencing accelerated changes in patterns of ownership and investment in the age of convergence of communication technologies. Access to the most advanced telecommunications technologies is not a constraint and neither is investment nor tariffs. Barriers erected to rein-in technology and the access it provides to digital resources is done by governments pursuing ideological systems that provide information control on their societies. It is extremely important that governments weigh the legal and technological difficulties in balancing the policy goals and objectives in regulating network communications.

In some countries, governments have a history of restricting or censoring information, and intercepting international information and publications. In others, online services are subject to licenses for various categories of services. Countries should develop internet specific laws as many have so far relied on laws for other mass media. Governments have taken measures to ensure security on the net through laws, regulations, penalties and also self-censorship. For example in China, security regulations for computers require owners of computer systems in most administration departments and companies to implement access, administrative and personnel controls. Other regulatory measures in countries like Afghanistan, China, Turkmenistan include loading of censorship software, government monopolies for connecting international networks and users' registration with the public domain as further explained.

a. Network Development

The countries best placed to reap digital dividends are those that have invested extensively in their network development. Some governments began quite early to steer policy and raise resources for excellent telecommunications networks, convergent technologies and interactive services. In other cases, countries appear

engaged at different stages of revamping policies, establishing guiding principles to upgrade existing networks, specifying the roles of the public and private stakeholders, establishing regulatory systems, framing affordable tariffs, and taking affirmative policy stances on universal access obligations.

Most countries in Asia have moved towards developing their telecommunications infrastructure with telephone networks reaching at least 80 percent of their urban and rural populations. The *World Telecommunications Report* (International Telecommunications Union, 1998, p. 18) established a symbiotic relationship between per capita GNP and teledensity (the average number of telephones for a given number of people) and there is a need to review the connectivity in countries to reach out to the people in remote areas. The average teledensity or the number of phones in the region is generally in the low-to-mid levels (10-60 percent). The better developed countries, particularly Brunei Darussalam, Japan and Singapore have technologically sophisticated and universally accessible systems. There is an almost 100 percent fixed line telephone service with a majority having internet access. As citizens get connected then the universal service obligations and the need for local and international connectivity will compel governments in other countries to think about affordable information access and consumption by less affluent groups that the market may consider uneconomical to serve.

Countries are also moving steadily from e-government to m-government to deliver information and services through mobile phones. The governance structures (ministries and departments) in most countries appear to have improved their decision-making capacity, factoring ICT holistically into decision frameworks, rather than considering telecommunications and information technology development separately. International development finance institutions have played a major role in enhancing the capacity of decision makers to address ICT development issues inclusively, and use development support funding optimally. For example, countries like Bhutan, Nepal, Afghanistan, Mongolia, Lao PDR, and Indonesia, are prioritizing the development of telecom infrastructure with funds from international sources like the World Bank, UNDP and European Bank for Reconstruction and Development. This is particularly important, as infrastructure is the foundation for universal access and for facilitating other ICT operations. If countries do not concentrate on the infrastructure and use of ICTs for development and e-government strategies, the telecommunications arena will fail to meet the ever-growing social and commercial demands within countries and result in countries being left out of the overall economic development process.

Table 2: Network Development

Indicators	Means of Verification
1. A comprehensive telecommunications infrastructure and a policy that supports its further development.	Responsibility for telecoms infrastructure is clearly assigned with a budget allocation by source of funding.
2. There is a national policy and plan that aims to connect urban and rural, including the most remote, areas of the country.	Statistics on the extent to which the urban and rural areas are connected through the telecom networks.
3. Dynamic long and short-term policies for regular upgrading, expansion and maintenance of the telecom networks to sustain large delivery infrastructure and service diversity.	Statistics of network development – optical fibres, broadband connections, transmitter masts and other projects to support high capacity infrastructure and service diversity.
4. The number of national and regional projects with public-private partnerships in telecommunication services, internet and other ICTs.	The number of licenses issued for private sector providers and overall policy for regulating the expansion of the telecom sector through privatization.
5. National policy designed for infrastructure to reach the rural and not concentrated in urban areas.	Increase in public call offices (PCOs), post offices or community centres where telephones are within reach of poorer sections of the people.
6. The percentage of citizens connected through landlines or mobile telephony.	Trends in the overall percentage of people with mobile or fixed line subscriptions [= standard ITU MDG indicators]
7. Policy encourages continual expansion and upgrade of the network to keep pace with increasing demand.	• The average speed of downloads (Kbytes per second or other) in different parts of the country continues to increase despite rising demand. • People are able to access information and are able to communicate quickly, reliably and efficiently.

b. Competition in the Telecom Industry

In a majority of Asian countries, governments control telecommunications infrastructure development. However, successful development is reflected in degrees of adoption of liberalized policies by governments that have resulted in the emergence of public-private partnerships. Public sector companies may also compete with the private, not only in infrastructure but also in the types of services, thus increasing the overall quality and competitiveness. WTO regulations have made governments open up to private sector investments, attracting foreign funding in telecommunication projects. This has resulted in a competitive environment and a win-win situation for rapid development with quality control insurance.

Table 3: Competition in the Telecom Industry

Indicators	Means of Verification
1. Telecom policies are liberated and encourage public–private sector partnerships in infrastructure development and provision of telecommunication services.	• Evidence/examples of projects that are operated through public–private partnerships. • There is an increase in the number of private organizations offering telecom services.
2. The state does not have a monopoly control over development of telecommunication infrastructure.	Number of independent telecom projects and services operating through competitive participation without overt control by the government.
3. The country is allowing private investment from international organizations for expansion of telecommunication networks.	The numbers of private and international development organizations that are investing in the country.
4. Policy ensures regulatory systems to guarantee fair practices relating to investments, procedures, licensing and maintenance of telecommunication networks.	Regulatory and monitoring authorities that give guidelines/instructions for licenses to private sector companies and international investors.

c. Pricing Policies

Telecommunication pricing policy impacts the access, use and expansion of networks. Investments in infrastructure with competitors, operators and the types of services provided impact tariffs. In general, the costs of telecom services are usually lowest in urban centres and highest in rural areas. Licensing of private service providers in countries transitioning to public-private or private arrangements for telecommunications development, are not clearly defined in countries like Lao PDR, Bhutan, Bangladesh and Kazakhstan among most others. The use of wireless technologies and mobile devices are providing immense relief to governments in connecting with people rather than landline phones that need an investment in time, infrastructure development and maintenance. Mobile devices are spearheading market expansion in urban and rural areas. These services are being used in communicating weather alerts, market data, health information, social issues and also government policies. Hence, most governments try, through policy, to ensure that the price of telecom services is broadly equal across the various sectors.

Telecom providers in countries like; Bangladesh, Bhutan, India, Japan, Kazakhstan and Nepal have systems in place to provide a variety of telecom services at reasonably affordable costs. As such, in countries with well-developed telecommunications networks inclusive of public-private partnerships like Malaysia, Philippines and

Republic of Korea, market forces successfully determine tariffs. The rapid development and widespread use of mobile technologies has drastically reduced the tariffs on telephones, but access to the internet is still costly, limiting the right to use by most people in countries like Bangladesh, Lao PDR, Mongolia and many others, particularly in rural areas.

Table 4: Pricing Policies

Indicators	Means of Verification
1. Regulatory Commission/authority sets the comprehensive policies for telecom tariffs.	Telecom authorities and partners ensure uniform tariff packages for services, subscription rates for internet and other services.
2. Policy interventions ensure that telecommunications tariffs are based on a competitive market environment.	Comparison of prices of government and private providers based on the features, facilities, licenses and services.
3. There is not much disparity between the prices paid by urban and rural people for telecom services.	Affordable prices are increasing the number of citizens using the telecom services in urban and rural areas.
4. Pricing policy ensures a continuous evaluation of tariffs to increase multiple uses of telecom services.	The increase or decrease in the number of people using telecom services as a result of changes in telecom tariffs.
5. Policies to control the telecom tariffs. Internet and mobile accesses are affordable at home and at cyber kiosks, and tele-centers.	Evidence of measures taken to keep tariffs at rates that are affordable to increase greater online access and participation. Evidence of increase in the numbers of PC sales.

d. Universal Access

Universal access to the telephone and internet continues to be a problem in over 15 countries across Asia with low infrastructure development. Higher costs, lack of connectivity and power supply limit internet access. The problems highlight developmental asymmetries in many countries, particularly in reaching people in far off rugged terrain where even state governments find it difficult and expensive to develop infrastructure and private providers are reluctant to invest in remote areas where the return on investment is low.

However, in recent years, governments have taken steps to increase infrastructure and also provide access across the region, and make available Public Domain

Information (PDI)³ for citizens. Countries like China, India, Malaysia and the Philippines are overcoming the problems of access by establishing community centres, and e-government kiosks to increase access for citizens, particularly access to e-government information and services. Other countries can emulate these strategies once the infrastructure is in place and individuals have personal computers. Mobile telephony providers have been in the forefront in increasing connectivity. ICT linkages to mobile telephony are also being fully exploited. In Brunei Darussalam, Iran (Islamic Republic of), Sri Lanka and Viet Nam, telecommunication development is primarily state controlled in contrast to countries like India, Bhutan, Malaysia and Singapore that are developing public–private partnerships to provide the infrastructure and make their services universally accessible.

Governments need to derive policies to ensure that public and private investors share the task of infrastructure development to provide universal access, whether it is to people living in smaller neighbourhoods or those living in far flung areas.

Table 5: Universal Access

Indicators	Means of Verification
1. A comprehensive infrastructure policy aimed at providing access to a vast majority of the population, even those living in remote areas of the country.	The number of people able to access government related information. There are supportive infrastructure interventions through access portals for providing universal access even in remote parts of the country.
2. The telecommunication networks are well established and not just urban centred.	• Number of access points in the urban areas and rural connectivity. • The types of connectivity in rural areas - community centres, kiosks, telecentres.
3. Government and private sector are making efforts to extend the coverage in rural areas.	The level of public and private sector investments with allocated budgets for Infrastructure development that help to increase access and use in rural areas.
4. A good cable infrastructure that is gradually moving to broadband connections to increase the speed and efficiency of the networks.	The percentage of the country having broadband connections to support ease of access.

3 UNESCO (2003) defines Public Domain Information (PDI) as “publicly accessible information, the use of which does not infringe any legal right, or any obligation of confidentiality. It thus refers on the one hand to the realm of all works or objects of related rights, which can be exploited by everybody without any authorization, for instance because protection is not granted under national or international law, or because of the expiration of the term of protection. It refers on the other hand to public data and official information produced and voluntarily made available by governments or international organizations.”

Indicators	Means of Verification
5. The country has established e-government portals and is providing many services for citizens.	A listing of the kinds of services provided by these portals and whether there is scope for further development.
6. Governments, as extensions of e-government and m-government strategies are using ICT linkages to mobile phones.	Listing of the kinds of m-government services offered through mobile devices.
7. The country has an excellent system of digitizing information in libraries and has developed digital library systems.	The number of libraries that have developed digital library systems.

e. Regulation

Regulation covers the need for laws that prevent fraudulent practices in pricing, access and control of content. Exponential growth of telecom infrastructure, communications and services require a great deal of regulatory intervention in the convergent and multimedia industries. Clarity in the telecommunications policy is desirable, given the fact that the Asian region has suffered the problems of political and economic instability. Regulatory institutions have to ensure the commercial sustainability of service providers. Even smaller countries like Bhutan, Lao PDR, Myanmar and Uzbekistan, see the wisdom in having clearly defined laws and regulations to govern the telecommunications sector. All countries need to institute regulatory bodies and authorities with policies that specify the rules, and control the expansion of services, licenses, tariffs as well as the internet content. Some countries like Afghanistan, China, Indonesia, Japan, Kazakhstan and Uzbekistan have several clearly defined laws and regulations to control their telecommunication sectors and prevent cyber crimes.

Table 6: Regulation

Indicators	Means of Verification
1. Telecom regulations and policies regulate the functioning of the communications networks and ICTs.	National policies and regulatory bodies are supporting the functioning of the telecom sector.
2. Clearly defined rules to determine the procedures and conditions for providing and using telecom services.	Quality of service and service level agreements between the government, service providers and the operators.
3. The policies include the rights, obligations and responsibilities of users and operators, and are binding for subscribers and operators of mobile phones.	Government has the power to revoke the licenses of the providers/vendors if the users overstep the regulations.
4. The country has policies investigating any violations of the regulations in the telecom sector.	The number and types of telecom violations investigated in the past two years.

3. The Information Sector

The information sector is the key driver of knowledge-based economies and information societies that enables human decision-making. Three issues appear to dominate the discussions on this platform – information content, delivery and processing. Governments have the potential for creating or expanding markets by stepping up citizen information and transaction activities through e-governance/government interventions and extending support to sustainable non-government initiatives.

Several barriers appear to keep information out of people's reach. These include: illiteracy (including digital illiteracy), access to knowledge sources (including media/internet access), information policing/gate keeping and priorities of market forces. In 2005, the World Summit on the Information Society declared a commitment to build people-centred, inclusive and development-oriented information societies, where everyone can create, access, use and share information and knowledge. This would enable individuals and communities to achieve their full potential by enhancing livelihoods and improving the quality of life.⁴

In the rapidly progressing knowledge-based technology centered economic environments, the urgency is even greater for countries to bridge policy gaps, especially those that address creation of content, delivery and processing of information to reach people with the kinds of information they need, in a language they understand, and also in the format that they prefer. ICTs are opening new opportunities for countries to attain higher levels of development, reduce many traditional obstacles, especially those of time and distance, and making it possible to benefit millions of people in all corners of the world.

Country reports suggest innovative methods by which content for the internet-based services is being created for internal consumption and also for generating external or exportable information. Given the interconnected world through the World Wide Web, there is almost universal access to any information developed in any part of the world. Countries are not only developing and processing content in local languages for ease of consumption in their own countries, but also developing software packages for overseas consumption. At the same time the Web. 2.0 and social networking sites have become extremely popular for connecting people and are also being used for advertising, political communication, e-commerce and other social and commercial purposes.

4 http://www.unctad.org/en/docs/dtlstict2011d3_en.pdf

a. Information Content

Information content is concerned with the production and development of intellectual property. It includes organizations that take the raw intellectual property and process it in different ways to distribute and sell to consumers. The creation of epistemic societies is premised on the assumption that most developing societies are able to reap the dividends of knowledge driven opportunities. Often these require interventions of the state and international and civil society organizations to spearhead efforts in the creation of information, education and entertainment materials that can be consumed cost-free or at affordable prices for the intellectual property development of the country. A key issue is the role of the public sector in content creation, especially its language and format so as to be accessible to citizens. Commercially run newspapers, radio and television stations continue to cater to their audiences in English and local languages, informing, educating and entertaining through the 24 hour channels and online access.

The convergence of the print medium, databases and telecommunications has led to the advent of the electronic content industry. Creation of content in local languages has assumed the pre-eminence it deserves. Bhutan, India, Iran (Islamic Republic of), Japan, Republic of Korea, Malaysia, Pakistan and the Philippines have made significant progress in developing the web-based content in local languages for the citizens instead of English, which has been a limiting factor in reaching the masses through new technologies. These include the information on government websites, information about the government services, application procedures and forms for all types of registrations, complaints, passports, licenses, healthcare, banking, newspapers, tourism. Lao PDR and Viet Nam are in nascent stages of planning content for citizen-related information and services in the local languages. The social networking sites are also fast moving towards being available in the local languages and are already popular in China, Indonesia and India.

The development of content is particularly important in planning e-government strategies to provide adequate information on government related issues, electronic document management, archiving documents and improving the quality of information to citizens. Most countries have developed single window systems, one-stop shops and e-kiosks for delivery of government services to citizens.

The internet has inspired an exponential growth in the electronic content development industry in the region. It includes commercial and non-commercial activities relating to bibliographic, textual and statistical databases as well as scientific, educational and entertainment materials in electronic forms like audio, video and multimedia. At present such information is available in Asian languages like Bahasa in Indonesia, Hindi and other local languages in India, Sinhalese in Sri Lanka, Arabic and Urdu in

countries like Bangladesh among others. In some countries, specific listed content providers like news agencies, syndicates, libraries and companies are involved in providing various types of content for the media.

Content is also aimed at bridging the digital and gender divides. Japan for example, is developing content specific to the poor and for the disabled and the elderly with the objective of access and use of ICTs for their overall development with information regarding their benefits, programs, training, healthcare and other information for inclusion in the knowledge society. Emphasis is also being given for training of women in the use of ICTs, to increase their access to new technologies and access to information in the process, to bridge the gender divide and increase their quality of life. Studies on the access and use of the internet content and e-government portals have found higher levels of satisfaction among the citizens in Sri Lanka, China, Bangladesh and Philippines (Chatterjee, 2003; Karan, 2004; Mathison, 2003; Riley, Okot-Uma and Rogers, 2001; Ummali and Paragas, 2004).

The content creation industry in the region – especially in China, India and the Philippines – has proved it's worth operating at the global level. Highly skilled computer literate and information specialists from developing countries are outsourcing information processing work from developed countries. Bangladesh, Malaysia and Viet Nam are planning to take advantage of the trend. Research is being conducted to identify specific areas of content creation and to market them at regional, national and international levels.

Table 7: Information Content

Indicators	Means of Verification
1. Citizens can access government and other information whenever wanted.	Government ministries and departments have websites that are regularly updated with new and recent data. Citizens can communicate with government departments through web pages.
2. Content is being created in the language and format that citizens can access and use.	Availability of information in all or a number of languages used in the country.
3. There is coordination between the public and the private sector in making content accessible to the citizens in the formats they need.	Number of joint public and private sector companies creating and managing the content of the government and other general information on the internet and enabling greater efficiency for citizens to use the information and services. For example – applications for licenses, driving licences, policies on applying for loans, registrations, bill payments, taxes, etc.

Indicators	Means of Verification
4. Policy ensures security of the content. There are complete sets of databases maintained by government departments on issues, procedures and policies for use and retrieval of government information, records of births, deaths, taxes, whenever required.	Relevant administrative sectors collect all appropriate content, which is stored securely, and can be retrieved safely. Example, the land records department has all the data on the purchase, registrations, and ownership or leased details of the property that is stored and retrieved for further transactions.
5. Content is prepared in a format to reflect, enhance or preserve the culture of the country.	There are programmes, guidelines and incentives to create digital archives and preserve/enhance culture, arts and the identity of the country.
6. Content is created for the needs of all uneducated, mentally challenged, disabled and poor people, so they are not left out of the development process.	Number of places where mediators are translating and explaining, where access is low, and low levels of literacy exist. Efforts made to support poor and disabled citizens.

b. Information Delivery

Issues of access dominate the information delivery debate. The delivery and distribution of content in conventional and digital formats involves service providers including news and book publishers, libraries, terrestrial and satellite broadcasters, cable television networks, mobile and fixed telephone service providers, and the providers of basic and value-added services. Most countries have general laws regulating the delivery of news and information through the mass media. In countries with a well-developed internet infrastructure, content is also delivered through web services. Mobile technologies are also proving to be great facilitators in delivering essential information and providing many services ranging from weather alerts to banking and payment of bills.

Where personal access to the internet is low in semi-urban and rural areas, information is delivered through community and e-centres with public access, like in Bhutan, Bangladesh, China, India, Malaysia, Philippines and Thailand. Computers have also been set up in these community centres or cybercafés in semi-urban and rural areas by international agencies and charity institutions along with government organizations to provide access to information, simplify service delivery, and improve the level and speed of services to the public. These cyber centres also have become popular and can be emulated by other countries to increase access.

Table 8: Information Delivery

Indicators	Means of Verification
1. National or state bodies have established appropriate policies, legal and regulatory frameworks for issuing licenses for information delivery.	Number of licenses for delivery of local, regional, international, satellite transmission services.
2. Information is delivered through multiple channels, like the print, broadcast and internet media.	There are sufficient outlets for information to be delivered to citizens through radio, television, computers, public call offices, cybercafés and libraries and also through educational institutions, training centres and institutes of higher learning like universities.
3. The government has a system of information delivery to reach the masses instantly or within timeframes through various channels.	The percentage of citizens who can be alerted immediately in a crisis, or with market information, weather alerts, pandemic alerts or significantly important messages.
4. Content is digitized for ease of storage, access and delivery whenever required.	Number of national and regional facilities undertaking digital archiving of information for the provision of information.
5. There are alternative physical delivery mechanisms to reach areas that cannot connect with regular networks.	Existence of alternative physical delivery mechanisms including wireless/laser technologies, electricity supply grid, satellite operations to provide high-speed internet access and cable TV.

c. Information Processing

Information processing is accorded high importance in organizations that generate large amounts of transaction data on account of large-scale computerization in public, private and government enterprises. Processing of information relates to collecting, organizing, formatting and disseminating information. Awareness of ICT's potential is high among policy makers in the Asian region, resulting in industry-friendly policies. China, India, Bhutan, Philippines and Malaysia have or are in the process of setting up multimedia centres as major capital investments to support information society developments in general, and information processing industries in particular. Organizations are increasingly outsourcing software development; data/information management, mining and warehousing functions and the services associated with specialized IT enabled services firms.

Many countries in the region, such as the Philippines, Singapore, Republic of Korea, India, Malaysia, have policies or are in the process of forming policies that enable such firms to perform outsourcing service functions for domestic and overseas clients. Policies have supported infrastructure creation, technology infusion, and establishment of specialized educational institutions for generating a large number of skilled professionals. Such specialized firms in like India, Malaysia, the Philippines, Singapore and Republic of Korea serve more clients in North America, Europe and elsewhere than those in their own countries. Many of these services already provide employment and are generating profits. Given their scope and application, the information processing industries in future will be a strong factor in increasing the economic development and competitiveness of countries in the region.

In harnessing ICTs for key economic sectors, some important recommendations include the use of personalized services to enhance healthcare, education, tourism, e-government, seamless delivery of financial services and supply-chain management. Lao PDR, Turkmenistan, Mongolia and Myanmar do not have the capacity for processing information and will soon need regional and international support to develop them.

Table 9: Information Processing

Indicators	Means of Verification
1. Progressive policies to promote the information processing sector for internal development and for external services.	A number of information processing units have been set up in the country through policy and government interventions.
2. The country is facilitating the institutional development of computer technology, training and education to enhance the skills for information processing and delivery.	The number of institutions of higher learning and private institutions that are offering courses and training as part of their curriculum in information processing to improve business, and governmental processes.
3. The country has clearly demarcated areas like technology parks, centres of excellence and IT hubs to research and develop information communication software for export.	The number of technology parks, university institutions, centres of excellence for promoting information processing skills.
4. Investments in IT and related services are generating profits and are contributing substantially in raising the metrics of economic growth.	Consistent increase in revenue in information processing industries.

Indicators	Means of Verification
5. The country is receiving investments for information processing from foreign organizations that are increasing the foreign exchange and the overall GDP of countries.	Increased revenue involved in information processing including outsourced services centres of foreign companies. Numbers of types of businesses set up through foreign investments and consequent financial growth.
6. Policies and regulations to facilitate organizations for carrying out business. They are provided with licenses and facilities for profit and employment generation.	The ease with which organizations get licenses for starting information processing services. Policies defined by the country/states/provinces that have eased the process of investment.

4. Information and Organizations

Transition to knowledge-based societies and progressive economies is driven by organizations trying to achieve competitiveness by encouraging information-intensive ways of working and networking. The public sector is a leading producer and consumer of information and needs to use new technologies to support its communication networks. Most countries have traditional forms of information and communication networks like letters, telegraphs services, paper filed records, hand written or typewritten and many a time not updated or easy to retrieve. All these records have worked for many years, but at a slow pace, and at even lower levels of efficiency and transparency. It is no longer possible to survive conducting business in traditional enclaves of domestic markets as markets have become global and there is a greater need to work efficiently with speed and efficiency and the need is to move to digital technologies to keep up with the global forces which are challenging countries to upgrade or be left out of the economic mainstream.

Modern organizations are managed by information-based co-ordination and control systems. Policies should cover the need to move to electronic government with information used as a resource to increase productivity, efficiency and competitiveness. It also enables organizations to increase their readiness for outsourcing, where countries in high cost regions export data processing and other activities to countries with lower costs. Just as with e-government, it is possible to identify the development of e-commerce that covers all the transactional activities that can take place between governments, businesses and the customers thereby resulting in increased, efficient and secure financial transactions.

a. The Public Sector and E-government

Implementation of national information and communication policies is the primary concern of the public sector. Governments across the Asian region are encouraging the development of telecommunications infrastructure, digital technologies and e-government strategies for facilitating individuals and organizations to interact and transact with government and other businesses. Producers and consumers of information are compelled to discover newer ways to deploy innovative cost-effective technologies that support multi-modal information exchange. Governments are under tremendous pressure to adopt new ICT technologies to steer their countries towards developing efficient, progressive and transparent systems of governance.

Governments are encouraging staff to use computers and ICTs and to develop information-intensive ways of working using e-mail, databases, archiving of data and processing with an overall aim to move towards paperless governance. Efforts have also been stepped up to provide the infrastructure, training and opportunities to develop skills. Citizens' awareness is vital as they seek out information and policies affecting their day-to-day lives. E-governance and e-services also make officials aware of their obligations, improve efficiency and ensure transparency of transactions that for many years were marred by corruption and fraudulent practices.

Most countries in Asia are gradually moving towards an e-government culture with ministries and service organizations having their own websites that are updated regularly and that provide a platform for citizens to interact with officials. Countries like Japan, Singapore and Republic of Korea have made extensive use of ICTs in all government transactions. Other countries are moving towards e-government with citizen services being delivered through government portals, cybercafés, and single-window systems. A variety of online services are made possible by web portals including land transactions, registration of births and deaths, marriage certificates, passport applications, income tax returns, payment of bills and so on. Given the success of e-government strategies in Singapore, India, Philippines, Indonesia, Thailand, Republic of Korea and other countries and the rapid expansion of mobile technologies across these countries, there are efforts by governments and industry to deliver citizen services through mobile technologies that are termed as mobile-government (m-government). These cheaper and more flexible and instant messaging media are aiding the delivery of information from healthcare to banking and related alerts on markets, weather and natural disasters.

Table 10: The Public Sector and E-government

Indicators	Means of verification
1. Relevant ministries/government bodies have established policies for promoting e-government as a strategy for the development of the public sector.	Listing of ICT policies to support e-government.
2. The ministries and associated departments have websites that profile and update information. Citizens can interact with officials.	Government information is available on websites that are regularly updated. Websites are interactive and citizens can access information and seek clarification.
3. Government sector organizations have computers in all offices and state management bodies for internal communication and also for providing public services conveniently, quickly and of high quality.	• Percentage of PCs to the total number of staff. • Percentage of staff using PCs. • Percentage of PCs having an internet connection.
4. Digital technologies and telecommunication networks are being used for data storage, transfer and applications for easy transactions.	Number and kinds of national databases and other data storage systems in various fields.
5. Public-private sector partnerships using ICTs are being used to facilitate effective governance.	Number of public-private sector undertakings using ICT partnerships to facilitate effective governance.
6. E-government services are being delivered through e-portals, kiosks and/or single window systems.	• The number of e-portals, kiosks and/or single window systems or any other channels in the country for facilitating e-governance issues. • Number of citizens using the e-government services.
7. The e-government system is well established in the county and it is moving to m-government to make citizen services available through mobile technologies.	Number of services for citizens through the mobile technologies, particularly those located in distant areas.
8. New media technologies are being deployed in rural areas and also among different segments of the population.	Evidence of ICTs being used in rural areas and agro industries benefiting from them.

b. Private Sector and E-commerce

One of the core strategies of most governments is to facilitate, nurture and monitor greater local and private sector participation to establish self-sustaining telecommunication services. An e-vigilant government ensures that e-commerce is conducted seamlessly especially when monetary transactions are conducted digitally. Most countries in Asia have adopted the regulations of the World Trade Organization (WTO) that supports the inclusion of the private sector for expansion of telecommunications and greater productivity (Grau, 2008). Though e-commerce is flourishing in some countries like Singapore, China, Korea, Malaysia, Japan, it is still a distant dream in others where there is low internet connectivity and online purchasing is minimal due to undeveloped online transaction facilities, low levels of reliability and high internet costs.

A policy to develop reforms, guiding principles and security systems for ease of online transactions is required. Such an environment includes a legal and policy framework, infrastructure and capabilities for e-business. Governments and businesses must work together to ensure that standards are set and that policies assist the electronic traders to meet their responsibilities efficiently. It is found that despite pitfalls, e-commerce transactions are increasing steadily in the region (Grau, 2008). For example, Republic of Korea has invested a substantial amount of money from its government budget, enacted promotional regulations and provided incentives to private companies to build networks. An effort has also been made to spur broadband demand and digital literacy. Security of commercial or non-commercial data/information has led to the passing of cyber laws and an increase in research efforts on use of new software for development and methods of data protection in the region, especially in countries offering IT and IT-enabled services to their clients worldwide.

Table 11: Private Sector and E-commerce

Indicators	Means of Verification
1. A government policy or act/s of parliament that encourage private sector participation through clearly defined legislative and regulatory frameworks allowing e-businesses to flourish.	Number of businesses with e-applications by sector and size of the company.
2. Government efforts to make the private sector more efficient and competitive.	Evidence that reliable infrastructure is enabling the private sector to operate efficiently and effectively, and to work with national and international partnerships.

Indicators	Means of Verification
3. Clear set of guidelines on the online procedures for transactions from the banking and credit card companies. Online credit card transactions to be processed at national and international levels, sometimes requiring additional verifications systems.	Number of online banking companies and transactions.
4. Policies and regulations for electronic fund transfer. This is particularly important for financial transactions, which are crucial to promote inter-bank transactions, encryption, electronic signatures, etc.	• Companies are using electronic funds transfer systems, encryption and electronic signatures. • Any special methods used by the country for successful implementation of e-commerce.
5. Country is exporting information technology services and e-commerce. There are organizations supporting international services and transactions (marketing, customer service, complaints, taking orders and payments). These income-generating activities are providing employment to large numbers of people, thereby supporting the overall GDP.	• National import and export report on software/ services in total. • Trends on import and export software/services.
6. Policies ensure IPR security and authenticate personal identities to prevent any identity theft and other fraudulent practices in e-commerce.	Policies and regulations are ensuring IPR security, and personal identities to prevent fraudulent practices in e-commerce.

5. Information in Society

The core of knowledge societies is not only promoting economic development but also developing ways in which information technology is enhancing human life through e-mail, blogging, chatting and accessing social networking sites. These are not only improving the quality of life, but are offering opportunities to those who are isolated from mainstream development. Broadband networks are allowing high levels of digital interconnectivity, promoting transactions, e-commerce and e-businesses. Citizens are using internet resources for personal and professional reasons.

a. Social Uses of Information

The governments and businesses in most countries are setting up computer and internet access points in the form of cybercafés, internet kiosks, and tele-centers to facilitate and support e-services for citizens to connect with each other. Home

computers are used extensively for e-mailing, chatting and playing games as well as for educational and professional use.

Affluent and skilled workforces are readily adopting ICTs in business and personal activities. The introduction of IT as a compulsory course in schools and colleges has increased the interest and enthusiasm among young people to use online resources. Gaming has become an indispensable part of internet use for young and older people. There is a steady increase in the number of women accessing the internet. Reports from Bangladesh, Indonesia, and the Philippines show a positive trend where even in the most conservative societies, women are accessing the internet in almost equal numbers as their male counterparts. In other countries, women are still lagging behind (Eickleman and Anderson, 2003; Jabbar, 2004; Junko, 2005; Nath, 2001; Onosaka, 2002; Parthajit, 2006; Sharma, 2005; Ummali and Paragas 2004, Onosaka, 2002; UNDP, 2004).

Social Networking sites like Facebook, Twitter, YouTube, MySpace are revolutionizing the way in which people across the world are connecting with each other. These sites are allowing for greater connectivity and are becoming important for creating social and professional networks.

Table 12: Social Uses of Information

Indicators	Means of Verification
1. National policies are designed to promote greater use of new communication technologies from home and from internet cafes, kiosks or cyber centres.	Increase in the infrastructure for greater online public access through the internet cafes, kiosks or cyber centres.
2. Countries are providing training to their citizens in the use of computers and the internet.	Increasing numbers of people of different age and income levels participating in training programmes. General and specific training programmes being offered at national and regional levels.
3. Citizens are connecting to social networking sites like MySpace, Facebook, Twitter and others.	• The percentage of citizens connected to social networking sites like MySpace, Facebook, Twitter or other sites specific to their own countries. • Statistical data indicating the changes over time of two to five years
4. Information channels and communication methods. Promoting the establishment of a variety of information channels to ensure citizens have access, have the information needed for social use, can connect with each other and for entertainment.	• Circulation and subscription numbers of newspapers, online newspapers, community radio and community TV government websites, e-mails and other online channels. • Instant messenger or chat (MSN, etc.) blogs, homepage, online communities.

Indicators	Means of Verification
5. Uses of information. Policies that promote the use of information for social, political and economic activities of citizens.	• Numbers using job search engines (with their own languages). • Online financial transactions. • E-commerce: internet shopping/selling. • Citizen participation in policies and projects of the government by providing feedback via off-line and online methods. • Leisure activities: downloading music, movies, games.

b. Digital Divide

Low levels of literacy mark most Asian countries, along with diversity of languages, urban-rural and rich-poor divide, a gender divide and of course the digital divide. Lack of information or access to information has resulted in social exclusion and exploitation of the marginalized. These include the disabled, the elderly and those living in remote areas. Governments are taking steps to bridge the digital divide by providing access to telecommunication services. The use of the internet and mobile technologies in rural areas is supporting e-government and m-government services. Radio and television reach over eighty percent of the population in most Asian countries (UNICEF, 1999).

Mobile technologies in particular are revolutionizing the telecom sector and thereby bridging the digital divide. Mobile phones make a difference in local communications, aiding businesses and particularly increasing healthcare and social services. However, despite the incredible growth of the internet since the early 1990s, some countries like Lao PDR, Turkmenistan, Kazakhstan and Pakistan still lack a robust telecommunications infrastructure with sufficient bandwidth for internet connections. Higher costs have limited the upgrading of hardware and software, notwithstanding the technological requirements that increase with even faster networks, higher-level machines and complex software. These factors are increasing the digital divide as countries mentioned above struggle to keep pace with new technological developments. Some countries are developing special schemes to bridge the divide.

Education and information literacy play an important role in keeping societies from fragmenting into information haves and have-nots. IT literacy is being introduced at the primary school level in most countries; and an effort is being made to reach rural areas through cybercafés and other access points. In addition to the digital divide, another restrictive factor is the gender divide. Though reports from some countries

indicate an increase in the number of women accessing the internet, in others, social barriers or other restrictions limit their access. Hence, women are not equipped with marketable IT skills in school or when they enter the workplace.

Successful examples can be found in countries like China, India, Japan, Pakistan, Republic of Korea, Sri Lanka, Thailand and Viet Nam where women are acquiring IT skills and are participating in development programmes. The Philippines, ranked 6th in the recent gender equality survey, is the only Asian country holding a place in the top 10 countries with no gender differences in access to information technology. There is also a prevalence of non-governmental and non-profit organizations that are working alongside governmental organizations in countries to narrow the digital divide for disadvantaged people by providing information resource centres and training programmes to improve access to information.

Table 13: Digital Divide

Indicators	Means of Verification
1. Policies promoting the infrastructure development in urban and rural areas to bridge the digital divide and bring ICTs to the poor and marginalized groups.	Steps taken by governments to increase investments in developing infrastructure to bridge the digital divide, by providing affordable public telecom services in rural areas.
2. Policies to bridge the digital divide among people of various socio-economic classes.	• Special report or survey to measure internet usage of the poor, availability of ICT training programmes targeting the poor. • Existence of special programmes or policies for enhancing ICT usage of the poor.
3. Policies to bridge the digital divide especially targeting women. Women have equal access to the internet and new media technologies.	• Special report or survey to measure internet use of women. Number of women accessing the internet services, women's participation in ICT projects and e-government, female graduates majoring in IT subjects, and also the percentage of women working in IT. • Availability of ICT training programmes targeting women. • Existence of special programmes or policies for enhancing ICT use by women. • Problems or restrictions imposed on women for using ICTs.
4. Policies are supporting the growth of ICT use in key sectors such as agriculture and small and medium industries.	• Studies/reports of proven impact of ICTs on farmers/ agriculture and small and medium industries. • Projects providing a basis for replication in other parts of the country.

Indicators	Means of Verification
5. Policies to bridge the digital divide especially targeting groups such as people with disabilities or a minority language.	• Special report or survey to measure internet use of groups such as people with disabilities or with a language difference. • Availability of ICT training programmes, existence of special programmes or policies for enhancing ICT usage of these groups.
6. Policies to bridge the digital divide that especially target the elderly.	• Special report or survey to measure internet use of the elderly. • Availability of ICT training programmes and special policies for enhancing ICT use by the elderly.
7. Increase in the number of rural students graduating in IT at different levels of education.	Statistical information on the number of rural students graduating in IT at different levels of education.
8. Special projects such as the use of Wireless Fidelity (WiFi), WIMAX, 3G, broadband or digital devices (digital TV, etc.) as an alternative to providing communication services to remote parts of the country to overcome the digital divide.	Evidence of Wireless Fidelity (WiFi) or wireless technology being used as an alternative to provide communication services in urban and rural areas.
9. Public-private partnerships (PPP) support the infrastructure development, training and use of new media technologies in rural areas.	• Partnerships between government and private sectors in training of personnel and also in rural and remote areas of the country. • There is an active and continuous programme of investment in the telecommunication sector for infrastructure development and training programmes by public-private partnerships. • Number of programmes like training of trainers' for schoolteachers, non-government employees, women, vocational training, etc.

6. Legal and Regulatory Frameworks

The legal and regulatory practices of a country determine the robustness of its national policies, political and economic stability and the overall wellbeing of a civil society. The planning, implementation and enforcement of laws in protecting intellectual property rights, national and personal data, and censorship laws establish the credibility of the system in moving towards a knowledge-based society.

The legal framework also establishes the citizens' trust in the country's governance and freedom to use ICTs in their daily transactions. As e-government and e-commerce strategies require online transactions, security and safety are essential. The inclusion of personal information in the databases of multiple organizations requires legislation to prevent the data from being used irresponsibly. Censorship and gatekeeping is important for the media, and for the type of information that is circulated through the internet. In most countries with extensive censorship regulations and practice, internet information is censored for various reasons as can be seen later in this section.

a. Intellectual Property Rights (IPR)

Intellectual Property (IP) protection encourages innovation and creativity. The wide dissemination of innovations requires them to be protected from imitations, misuse and deceitful practices. The World Intellectual Property Organization (WIPO), The Paris Convention for the Protection of Intellectual Property Rights, The Stockholm Convention and the Madrid Agreement for the International Registration of Marks have extensively defined the finer points of IP.

International organizations, governments, corporations and individuals consider IP to be protected through a policy or an act of parliament. There is a profusion of cyber crimes with the infringement of IP being a major one. Most countries have responded by legislating with laws to prevent others from profiting from the intellectual endeavours of others. The IPR covers a wide range of issues from copyright and patents to protection of designs, trademarks, inventions and other materials.

Most countries in Asia are practicing basic copyright legislations but others have yet to enforce their laws with penalties. Lack of strict legislations and penalties have resulted in pirated goods from books, films, music, videos, to software and computer games across countries in Asia.

Therefore, enforcement of laws and regulations is essential to prevent the widespread piracy of intellectual property in Asia. In some cases, international bodies like the International Intellectual Property Alliance (IIPA) intervene when countries fail to provide the mandated "adequate and effective" copyright protection and enforcement

under the IPR regime. For example, Republic of Korea recognizes intellectual property related to e-commerce such as computer programs, semiconductor-chip-layout designs and databases. An amendment in 1991 to the Unfair Competition Prevention and Trade Secret Protection Act provided a statutory basis for protecting trade secrets. The law is also the main piece of legislation used to deal with domain-name disputes, since it provides that well-known or recognised trade names, trademarks or brands have legal protection against unauthorized registration of a domain name using such marks, names or brands. A revision to the Copyright Act, in July 2000, punishes software piracy with the same penalties for unauthorized online distributions of copyrighted contents. Furthermore, changes to regulations under the Copyright Act, in effect from July 2001, allows the Ministry of Information and Communication to remove and discard pirated content on the internet at its discretion. Another revision, implemented in July 2003, extends copyright protection to databases, regardless of the originality of their content. An amendment to the Unfair Competition Prevention and Trade Secrets Protection Act, implemented in July 2004, stipulates that registering or using a domain name that is identical or similar to a third party's personal name, trade name, trademark, etc., for the purpose of gaining unjust profit or causing harm to the third party constitutes unfair competition (Global Technology Forum, 2007). In Kyrgyzstan for example, the principal legislation regulating intellectual property includes the Civil Code of the Kyrgyz Republic, the Patent Law, the Law of the Kyrgyz Republic "On Trademarks, Service Marks and Merchandise Origin Marks", Law of the Kyrgyz Republic "On Copyright and Allied Rights", Law of the Kyrgyz Republic "On Legal Protection of Computer and Data Base Software", other laws and subordinate legislations.

Table 14: Intellectual Property Rights (IPR)

Indicators	Means of Verification
1. The Country has IPR laws and copyright laws.	IPR and copyright laws and other IPR legislation are enforced.
2. Government has enacted laws, ordinances, decrees and directives to establish a legal framework for the protection of intellectual property rights and patents in the new media technologies.	• A legislative framework has been established for new media and for protection of IPR. • Evidence of the laws that are included for IPR and patents in the country.
3. The laws contain provisions for protection of software, trade secrets and integrated circuits.	Laws contain provisions for protection of software, trade secrets and integrated circuits. Cases where the government has instituted legal proceedings for violating IPR.

Indicators	Means of Verification
4. Regulatory systems prevent pirated audiotapes, compact discs, videotapes, and other media from being sold freely in the country.	• Strict laws and penalties prevent the sale of pirated CDs, audiotapes, videotapes and other media in the market. • Reports pertaining to the violation of IPR.
5. The copyright act extends to the new and converged multimedia environment.	The coverage of copyright act makes specific reference to new media industries.

b. Data Protection and Privacy

Data protection legislation ensures the protection of personal information from being communicated or used irresponsibly. It provides every individual with a degree of privacy, particularly the data that relates to his or her personal, financial, health and professional work. This concept, first developed within the European Union in the 1970s, is now well established in all member states. Its global significance arises because European Union legislation prevents organizations from communicating personal data to other organizations operating in countries that do not have similar levels of data protection facilities and laws. Any country wishing to benefit from outsourcing data processing, therefore, needs to develop data protection mechanisms and laws. Though information in the public domain should be easily accessible to support the knowledge society, it should also be protected from misappropriation.

Countries across Asia like Republic of Korea, Iran (Islamic Republic of) and Singapore have proposed and implemented several new laws for data protection, or have amended their copyright laws to include data protection of persons, e-mail, computer programs, semiconductor-chip-layout designs, rights of copyrighted works and databases. Personal data protection and privacy needs to be guaranteed, and in some countries, e.g., Viet Nam, new monitoring techniques require ISPs to record the identity and internet behaviour of users at internet kiosks, and to store the information on their servers for one year. Moreover, country's national defence related documents, scientific inventions, cutting edge research work or personal identities may be stolen or used irresponsibly if not strictly protected under regulation. It is imperative that countries implement such laws to prevent major cyber crimes in the countries, which may result in reversing the trends of development.

Table 15: Data Protection and Privacy

Indicators	Means of Verification
1. Countries have data protection and privacy laws. Cyber Laws are seen as essential components of the criminal justice system.	Statistics on the use of data protection and privacy laws.
2. Data protection laws provide every individual with a degree of privacy, particularly in terms of the data that relates to personal information.	• Citizens in the country give their personal data without hesitation for online transactions. • Data protection laws ensure protection of their personal details, personal copyrighted works. There are ways to protect them from junk e-mail, spam, viruses, etc.
3. The country has laws for e-commerce transactions for businesses to develop. These include provisions for protection of business data, a digital signature act - to recognize digital IDs, signature certificates, and electronic authentication and verification.	• Frequency of individual online transactions is progressing well. • Citizens and organizations freely provide their personal details and carry out monetary transactions, without the fear of them being used irresponsibly.

c. Access to Official Information

One of the key indicators of good governance is a transparent system where citizens have access to official information and there is a high level of interaction between the government and citizens. Public institutions such as libraries and archives, museums, cultural collections and other community-based access points need to be strengthened to promote the preservation of documentary records and free and equitable access to information. Affordable access should be considered an important component of a truly inclusive information society.

Most countries, through their government websites provide official information and aid citizens' online interaction and transactions. Other countries like Uzbekistan, Iran (Islamic Republic of) and Lao PDR have limited access to information, while few have no access. In countries with limited or no access, government-related information is considered a state secret or kept secret for reasons of national security. In some countries there are no laws that allow for public access to government information and in practice the government does not provide right of use. The progress of the country is also dependent on the transparency of governance and the extent to which citizens are able to access information held by the government and other official bodies.

Table 16: Access to Official Information

Indicators	Means of Verification
1. A national act or policy to ensure that citizens have access to official information on demand, which requires the public officials to provide it.	• Ease of access to government information. • Number of people accessing official information.
2. The government through websites or other print or electronic forms provides access to information. The country has taken steps to broaden access to information in most sectors.	• Government information is available through either print, electronic forms like videocassettes, CDs or through websites. • The government websites provide adequate information and they are regularly updated. • Steps are being taken for all government departments to go online.
3. The exception to public access to information is for the purpose of national security.	Citizens have access to most official information unless it relates to national or international security or threatens the wellbeing of society.
4. The information provided to the public in the national or local languages is easily comprehensible and usable.	Number of local languages used for government information.
5. The government has established interconnectivity across government offices for effective data sharing with the public, in a comprehensible format and language through ICT-based citizens' services delivery systems like kiosks, e-portals, etc.	Citizens can access and use official information through e-government portals, internet kiosks, cyber centres and other ICT-based citizen services delivery systems.

d. Censorship Revised

Censorship of the media is being implemented in various forms, from government surveillance of media content to blocking of websites and interception of online information, particularly under exceptional circumstances, such as an imminent threat to the national interest and security of organizations and individuals. Evidences from countries substantiate the need for such restrictive practices that are deemed necessary, in view of national security and in public interest; these may include information that may cause political unrest, revolt against the government, maligning the heads of states, religious incitement, pornographic and gambling sites, etc. The following examples from countries highlight the areas of concern that have required censorship regulations.

Censorship rules are strict in countries like Pakistan, Afghanistan, Thailand and Uzbekistan. In 1996, the Chinese government put in place restrictive laws to prevent people from accessing certain foreign media, human rights websites and other content that the government deemed 'sensitive material' (including pornography and information that could be a potential threat to the Chinese government or China's national security). The Pakistan Telecommunication Company Limited (PTCL) sets the major controls on information; it has established two National Access Points (NAPs) in Karachi and Islamabad intended to block internet telephony and pornographic websites. Brunei Darussalam has a media and press system that is highly censored, with little diversity or freedom. Iran (Islamic Republic of) is one of the most extensive filterers of the internet. It consistently filters a broad range of websites that are offensive to the moral standards of Iran's religious leadership. Three methods of censorship are currently used in Iran (Islamic Republic of): censoring by blocking ports, censoring based on key words used in the URL, and censoring websites through blocking access to URLs or their IPs (Report on internet in Iran (Islamic Republic of), 2005).

The Government of India established the Computer Emergency Response Team, or CERT-IN, as a means to monitor all incoming and outgoing internet traffic. The primary purpose of CERT-IN is to handle internet security that institutions and agencies are allowed to call on, including the home affairs ministry, courts, the intelligence services, the police and the Head of the National Human Rights Commission. In some countries, censorship is pervasive, specifically self-censorship that is practiced by journalists out of fear of the consequences of writing or broadcasting anything the regime might not approve of. For example the Telecommunications Authority of Singapore (TAS) governs electronic surveillance of communications. The government has extensive powers under the Internal Security Act and other acts, to monitor anything that is considered a threat to "national security". The information communications technology (ICT) sector in Kazakhstan is overregulated as evidenced by several legislative acts that expressly or implicitly control the information and telecommunications environment. All telecommunications operators are legally obliged, as part of the licensing requirement, to connect their channels to a public network controlled by Kazakhtelecom (see <http://opennet.net/research/profiles/kazakhstan>).

Table 17: Censorship

Indicators	Means of Verification
1. The Ministry of Communication and Technology or a legal authority regulates the surveillance of internet content and lays down clear censorship policies. These include the powers under the Internal Security Act and other acts to monitor anything that is considered a threat to national security.	• A legal authority regulates internet content. • Acts or decrees of government that regulate and control internet content.
2. The country has a set of censorship laws and regulations in terms of how ISPs and cybercafés install and monitor software and store user information. Initiate legal action or cancel licenses.	Rules for ISPs prohibit their customers from disseminating (via internet) pornographic, extremist, or terrorist materials or any other information, not in accordance with the country's laws and detrimental to the interests of the country on grounds of national security.
3. There are laws where the government can cancel the licenses of ISPs if content is detrimental to the functioning of the government.	Evidence where the government has cancelled licenses or has issued warnings if the content was found to be inappropriate.

7. Skills and Competencies

The skills of the workforce determine the e-readiness of a knowledge-based society, where citizens not only access information but are also training and sharing knowledge by creating content, delivering, processing and circulating information in cyberspace. Literacy and universal primary education that includes information technology and information literacy education are key factors for building a fully inclusive knowledge society. Information policies need to be geared towards acquiring skills by providing opportunities for training in processing and using information. The empowerment of people through technology is crucial to learners, developers, contributors, entrepreneurs and decision makers. The skills of content creators, publishers, producers, teachers, trainers, archivists and librarians play a role in promoting and sharing knowledge.

In some of the least developed countries, like Lao PDR, Myanmar, Nepal and Uzbekistan, international organizations are supporting institutes to train citizens in basic computer skills. Efforts are being made to give every person an opportunity to understand, participate and benefit fully from ICTs along with the development of information literacy skills to complement the technology.

a. Basic Information Literacy and Information Handling Skills

Policies to raise the level of education and IT skills for e-preparedness are important, as countries become digital societies and part of the global knowledge economy. The achievement of educational goals often requires major investments in schools, computers, training institutes and support from governments, the private sector and international organizations. Governments need to take a broad view of their IT literacy policies and aim to equip citizens with the skills to use technology effectively. In future, a wider view of information literacy is desirable, which involves skills in the identification, collection, interpretation and use of information.

Countries like Philippines, Republic of Korea, China, India, Japan, Sri Lanka and Singapore have realized the need for widespread introduction of IT education for producing skilled manpower to spearhead national development projects. Hence, facilities are being built across the countries to promote basic education and to include ICT training at all levels including primary schools. Programmes like Information and Communication Technology in Schools in these countries, IT faculties in universities for students and vocational training institutes for older people, women and other groups are increasing the number of trained people in the countries. An important aspect is also the need for developing library systems for public access to information. As libraries form the core for information literacy training, efforts must be made to equip them with good infrastructure and the latest technologies.

In some countries, notably India, Iran (Islamic Republic of), Japan, Myanmar and Nepal, a broader view is taken with the intention to raise the level of literacy as well as that of information technology literacy throughout the population. Bhutan for example, facilitates ICT education with specific training in handling transactional work pertaining to a wide range of business processes across industries. The Philippines has started computer training from preschool in both public and private institutes and the vision is that by the year 2010, every school in the Philippines; preschool, elementary and high school, public and private, will be a learning community committed to preparing for a new generation of Filipinos to be productive citizens in an information society.⁵

Skills standards frameworks need to be developed with assessment instruments to measure the skills in schools and among university graduates. The need is to train professionals into globally competitive players and an internet savvy workforce. In other cases, incentives to acquire the necessary skills are provided by the employment requirements of government/state employees and private sector undertakings. In countries that are working in Business Processing Outsourcing (BPO) organizations are giving priority to promoting this human-resource intensive industry, considering its

5 http://www.pcs-it.org/index.php?option=com_content&task=view&id=37&Itemid=1

use in the vast global and domestic markets for outsourcing projects with enormous opportunities for income and employment generation. Developed countries are outsourcing various services from after sales services to medical transcriptions, marketing and providing software solutions for organizational problems.

Table 18: Basic Information Literacy and Handling Skills

Indicators	Means of Verification
1. Government organizations/institutions are spearheading the policies for promoting effective ICT training courses at primary, secondary and tertiary levels and also for all sections of the population.	ICT uses included in the curricula at primary, secondary and tertiary education as well as vocational training centres and other non-formal institutions.
2. The country has a national literacy mission or national education policy for increasing information literacy in the country.	The national literacy mission and vision that sets the basic agenda and has the curricula for increasing information/computer literacy in schools and among the marginalized masses not in the regular school systems.
3. Policy to improve the library and information systems especially those in educational institutions.	Number (percentage) of educational institutions which have libraries and integrated information systems.
4. Media and information literacy (MIL) programmes are designed to increase and promote understanding of the functions of the media, the ethical issues, and ways to evaluate the media.	The country has adopted an integrated effort towards media and information literacy (MIL) programmes. The courses are well defined and detailed to include various issues relating to MIL.
5. The information policies cover training of people in key sectors in information handling and processing.	One of the objectives of the national information policy includes training in information handling and processing skills such as: creating content, managing online information, website management, data management, access and retrieval skills, formatting and processing of information.

b. Information Technology Specialists

IT specialists are in great demand in almost every forward-looking organization including banking and finance, manufacturing, logistics, entertainment, transportation and healthcare. One of the goals of national IT policies in almost all countries in Asia is to raise the standard of IT skills. Likewise, it is necessary to develop information science

and library specialists who can support workers in such industries to make effective use of information. Therefore knowledge-based societies also rely on an adequate supply of professionally trained IT and information science specialists for the creation, processing, storage, retrieval and other multiple uses of information.

Most Asian countries are developing policies that include setting up special research and training institutes to train IT specialists to support the needs of the country. International organizations are assisting in training young people in utilizing cutting-edge technologies and innovations in IT applications at the undergraduate and graduate programmes in universities and institutes of higher learning. For example, In Bangladesh, the Information Technology Policy 2001-2005 envisaged the creation of an Institute of Information Technology and the expansion of IT departments in existing universities and institutes to meet the demand for IT specialists (ICT Policy, 2002)

In Japan, the e-Japan Strategy made specific reference to 'technical experts, researchers and digital content creators to be fostered to explore the frontiers of IT'. The strategy was followed up in 2004 by the e-Japan Strategy II Acceleration Package.⁶

In Bangladesh, institutes of technology and colleges are being strengthened to produce IT graduates in four-year courses, and to establish centres of excellence in IT by higher allocation of resources for training information technology specialists. The Philippines and India are home to leading professionals and specialists in *software services, applications development, quality assurance, business services, human resource management* and a multitude of other fields. They all play a major role in the development of the national outsourcing industry. In Iran (Islamic Republic of) the Telecommunication Research Centre (ITRC), comprises of highly experienced researchers who carry out experiments in the broad faculties: Information Technology, Communication Technology, ICT Security, and Strategic and Economic Studies.

In the emerging economies of Central and South-eastern (CSE) Europe the importance of developing information and library science specialists has been recognized in national policies. For example, the Czech Republic strategy for information literacy in higher education and, with the support of UNESCO, a policy platform for information literacy for CSE Europe has been developed (Perjova et al., 2006). A similar strategy should be considered for Asian countries to complement the ICT specialism.

6 http://www.kantei.go.jp/foreign/it/network/0122full_e.html (Accessed 10 February 2011)
<http://www.kantei.go.jp/foreign/policy/it/940318senryaku-e.pdf>.

Table 19: Information Technology Specialists

Indicators	Means of Verification
1. The country has set up intensive research and centres of excellence for information technology specialists to upgrade their skills in business projects.	The number of information specialists working at training schools or centres of excellence that are training people for advanced levels of professional development.
2. The country is using ICT in government institutions with IT specialists engineering the flow of online operations.	An evaluation of the ways in which the country is using IT specialists in governments to facilitate the smooth flow of online operations.
3. There is steady increase in the number of students graduating in IT at different levels of education.	The statistical information on the number of students graduating at different levels of education.
4. Education policies for developing institutes of higher learning for training highly skilled personnel for capacity building.	The number of Institutes of higher learning or allied universities for training IT professionals and develop globally competitive and internet savvy workforce.

Table 20: Information Science Specialists

Key Indicators	Means of Verification
1. The country has set up intensive research and centres of excellence for information science specialists to upgrade their skills.	The number of information science specialists working at training schools or centres of excellence that are training people for advanced levels of professional development in information science.
2. The country is using information systems for managing policies and evaluating outcomes in government institutions with information specialists designing and managing the multi-dimensional flow of information.	An evaluation of the ways in which the country is using information specialists in government to facilitate the smooth flow of online operations.
3. There is a steady increase in the number of students graduating in information and library sciences at different levels of education.	Statistical information on the number of students graduating at different levels of educational.
4. Education policies for developing institutes of higher learning for training highly skilled information science personnel for capacity building.	The number of institutes of higher learning or allied universities for training information and library professionals.

SECTION III: CONCLUSIONS

The last five years have seen an unprecedented change in the use of Information and Communication Technologies across the world, with over a quarter of the world's population using the internet, and hundreds of millions using mobile phones. The global village is no more a distant dream but a stark reality, as people on different continents connect with each other pursuing academic interests, transacting businesses and building social and economic networks. In short, information policies, infrastructure development and use of technologies are impacting every aspect of life and living.

The countries that have been successful are those that have managed information efficiently with well-defined ICT policies and focused on using these technologies in their governments and private sector operations. Therefore, as countries are moving towards information-based societies and knowledge-based economies it is imperative that they prepare themselves to be part of global information processes. ICTs are driving competitiveness, economic growth and social interaction. Countries in Asia are at different stages of development and are in the process of planning policies, executing plans and making concerted efforts to be part of the global society.

This report through an analysis of seven dimensions of information policies defines the key areas of concern and suggests the types of information policies required in each dimension. It identifies the indicators that reflect upon the policies that the country may be already having, and those that need to be developed for the future. The means of verification reflect the methods by which the policies, if present, are being executed or not, and the areas that need to be developed and implemented to increase the best information technology practices for development in their countries.

Telecommunication networks are expanding rapidly as governments move away from monopolistic controls to more liberal policies thus allowing the participation of the private sector and international organizations. This has resulted in greater connectivity among the urban and rural masses and has enabled a two-way flow and greater interactivity of communication, restricted until recently by the one-way flow of information from the mass media like newspapers, radio and television. New media technologies have become a means of instant communication and are opening up new channels for the free flow of ideas, opinions, interactive discussions as well as complaints and grievances. Extensive investments in infrastructure are allowing citizens to access e-government services through cybercafés, community centres, telecentres, and internet kiosks.

There are excellent examples from Asian countries that have benefited from the use of new technologies and innovative e-government strategies that have won awards and recognition across the world. In Malaysia the 'One Service, One Delivery No Wrong Door' portal for government services is highly successful in integrating and connecting Malaysians in the capital. In India the e-Lekha System developed by the National Informatics Centre, achieved standardisation and efficiency of financial processing across a large number of government agencies and transaction types. Singapore's Integrated Health Information Systems has a common electronic medical record platform that is used across hospitals, specialist clinical providers and primary healthcare clinics. Viet Nam's Sustainable Development Centre's '2-way information delivery' model (2wID)' for Vietnamese farmers is an excellent example in the use of e-services. Access to technology to help crop production was limited until the introduction of the 2wID platform helped to bring about a tremendous increase in production. The iSchools project in the Philippines coordinated by the Commission on Information and Communications Technology aims to integrate education by providing ICT infrastructure and training to high schools across the archipelago.⁷

Though technologies are effective in successful development projects, the World Wide Web with a multitude of unrestricted information is creating social and cultural problems among nations, and particularly in the more conservative societies. At the same time, cyber crimes are increasing. This has led to countries developing policies and regulatory frameworks to control information on the internet. Asian nations are implementing policies and censorship regulations that restrict users to accessing certain government

7 http://www.pcs-it.org/index.php?option=com_content&task=view&id=37&Itemid=1
<http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan011269.pdf>
<http://www.ida.gov.sg/idaweb/broadband/infopage.jsp?infopagecategory=&infopageid=1880&versionid=7>
<http://www.ida.gov.sg/News%20and%20Events/20061121140736.aspx?getPagetype=20>
<http://www.moe.gov.sg/edumall/mpite/index.html>
<http://telecomit.net/index.php?ns=News&dialogue=View&id=195&cat=6&name=telecom-infrastructure-to-be-opened-to-private-sector>

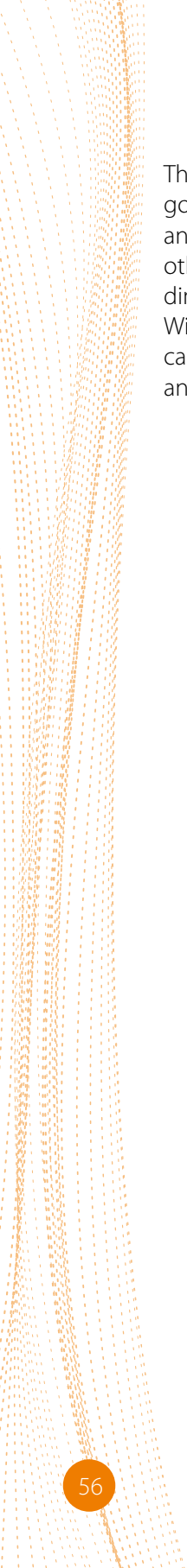
related information; and are imposing penalties on those writing and circulating information that is detrimental to the government in power, society or the people.

The economic development of a country is also dependent on the information policies that ensure the ways it can create, process and deliver content. These areas require special focus as the creation of content has applications in all areas of expansion and growth like agriculture and industry. This again calls for co-ordination between the public and private sector in formulating the content and making it accessible to the people in a language and format that they can understand and use. Countries need to pay special attention to creating a pool of content creators particularly for the new media. A second subsector is the delivery of content. Countries need to identify the most efficient and cost effective channels through which information can be delivered and in formats that can be accessed. Apart from the mass media and the internet, the mobile phone is fast becoming a popular mode of communication and is being used by government and private agencies in many ways through text and visual messages, news alerts, podcasting and other types of messages.

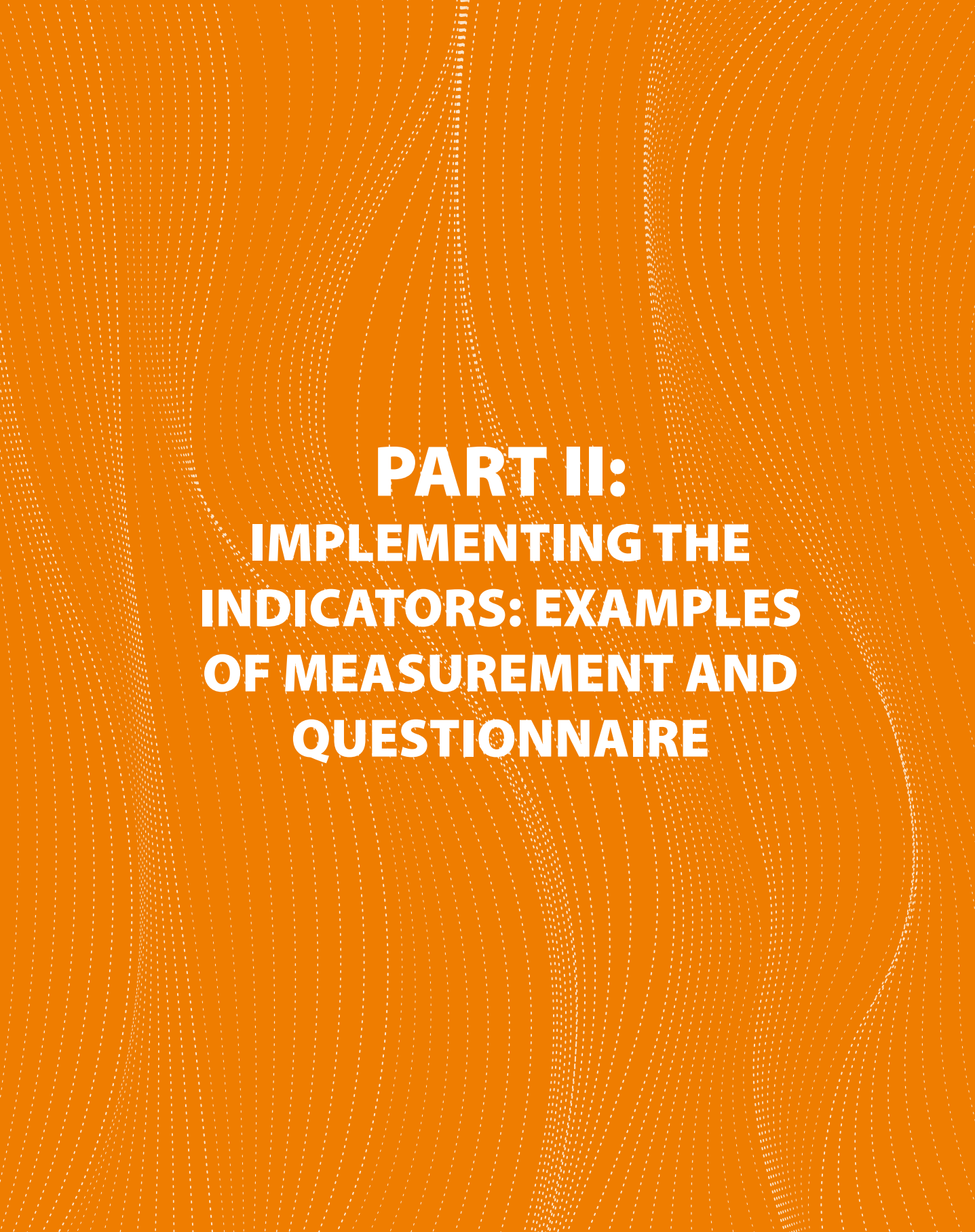
Technology tends to be urban, and in most countries the rural segment faces technology exclusion with limited or no access to any means of communication. The digital divide is widely existent in most countries. Governments are entrusted with the task of providing the networks. The need is to frame policies to increase greater participation from private and international agencies to bridge the digital divide. Closely associated with the digital divide is the gender divide which again needs attention as technology continues to be male dominated, and concerted efforts are being made to include women in technology initiatives, media literacy and training programmes. Though many countries are reporting an increase in the number of women accessing technology, it has still not reached the optimal levels of equality.

Asian countries are in the process of using technologies to their full potential by devising new ways in managing multiple operations and solving crises. Some Asian countries have their best manpower skills in the IT sector, which need to be leveraged in technology-oriented businesses. The indicators and points of verification reflect on strategies that countries need to take to become self sufficient in their IT workforce. Some countries have introduced IT at the primary school level and have started centres of excellence to have a continuous flow of trained and skilled manpower to facilitate development. A number of these professionals are being engaged for outsourcing projects from other countries that are generating employment and raising the economic standards of the people in developing countries. Given the success of such projects in India, China and the Philippines, others are also intensifying their efforts in capacity building to procure such projects and increase income and generate employment.

In conclusion, for countries to succeed and be part of the knowledge-based global society they need to be prepared to manage the many information challenges in the future.



There is a need to develop well co-ordinated information policies with clearly defined goals, strategies and tactics. The policies will serve efficient running of governments and the external forces that demand greater inputs in transacting businesses and other international operations. This report, through an in-depth analysis of the policy dimensions provides a general framework for reviewing national information policies. With the indicators and the means of verification in constructing policies, governments can make their countries internationally competitive with a knowledge-based economy and an enlightened society.



PART II: IMPLEMENTING THE INDICATORS: EXAMPLES OF MEASUREMENT AND QUESTIONNAIRE

Introduction⁸

Background

With the advent of the information society and the abrupt increase in the quantity of information available, people need information literacy skills as never before. Information literacy is the capacity of people to recognise their information needs, locate and evaluate the quality of information, store and retrieve information, make effective and ethical use of information, and apply information technology to create and communicate knowledge (Catts, Lau and Ellis, 2008). Information literacy skills are not only necessary for individuals to achieve personal, social, occupational and educational goals, but also crucial for developing health and wellbeing. For this reason, information literacy was endorsed by UNESCO's Information for All Programme (IFAP) as a basic human right that people should master to succeed in work and life in the 21st century.

The capacity to use Information and Communication Technology (ICT) is an important prerequisite for information literacy within a knowledge society. Access to ICT was a main theme in the World Summit of Information Society (WSIS) at which it was agreed to 'develop policy guidelines for the development and promotion of public domain information as an important international instrument' and set the goal to ensure more than half the people in the world should have access to ICT by 2015 (WSIS 2003; B6 and C3).

Thus, it is important for countries to collect data on individuals' information literacy skills and ICT usage to improve people's lives and facilitate evidence-based policy making to take advantage of new opportunities presented by emerging technology. Surveys on information literacy have so far focused only on students, rather than the general population. ICT surveys tend to be more focused on provision and access, not actual usage. To address these limitations a prototype household survey was created to cover both information literacy skills and people's actual usage of ICT.

Collecting Data on Information Policy

The first part of this publication assesses a country's overall information policies, the telecommunication networks, the public private partnerships and legislation and regulatory mechanisms that support the information creation and dissemination. It lists appropriate indicators for each section. This part of the publication provides some ideas for the measurement and collection of data in implementing the indicators described in the first part.

⁸ The part of the report was written by Ms. Ji Eun Lee, and edited by Mr. Simon Ellis of UIS-AIMS

The indicators discussed in the first part of this document require a variety of measurement and data collection strategies. Some of them expect a 'simple' response of Yes or No from an appropriate national authority; others require data from telecom providers about the extent of service coverage. The most complex require skills measurement of individuals' skills and competences.

Some standards already exist at national or international level for aspects of the data covered in this report. At the international level UNESCO has piloted work on:

- Media Development Indicators, (UNESCO, 2008B).
- Global Surveys of Media; newspapers, television, and radio. UNESCO Institute for Statistics carries out regular international surveys on this topic. This survey is now being reviewed. The last survey was in 2005/6 and the questionnaires can be found at http://www.uis.unesco.org/ev.php?URL_ID=3754&URL_DO=DO_TOPIC&URL_SECTION=201.
- Library Statistics, covering one of the major sources for public information in the vast majority of communities (Ellis, Healey, Meunier and Poll 2009, Healey ed., 2009).
- The surveys of the Partnership for the Measurement of ICTs for Development; covering the availability of ICTs in the home and the workplace, but not covering content or use <http://www.itu.int/ITU-D/ict/partnership>.
- Information Literacy indicators. Indicators of provision, and usage are covered in the preceding standards. Indicators of skill and competence are still under development (Catts, Lau and Ellis, 2008).

UNESCO bases its standards on existing best practice and all the above standards are based on usage in a number of countries around the world, but will require adaptation to regional and national contexts. These standards will help agencies implement many aspects of this report, setting the regional information policy indicators in a global context and providing many ideas on existing statistical data which can be used to compile the required information.

A more concrete example for the development of appropriate survey instruments is given below, it covers how information is accessed in the household, especially through ICTs. The questionnaire will cover some indicators discussed in Section I, Category 5 on information in society, and Section I, Category 7 on skills and competencies.

The Household Survey on Information Literacy and ICT Use in the Home

The importance of this model survey is two-fold:

1. Some Asian countries, especially Republic of Korea and Japan are amongst the most advanced information societies in the world but surveys in these countries are written in languages that are not well known outside the countries in which they were developed.
2. Current household surveys, such as the model surveys proposed by ITU under the Partnership for Measuring ICTs for Development, while considering the availability of technology in the household, do not consider its use. Often technologies may not be 'available' to all household members, as some may be constrained by social barriers.

The information society is developing very rapidly and practices common in the most advanced Asian countries may soon become much more widespread. Surveys of information access in the household need to ask detailed questions of usage by individuals to confirm that all members of the household are indeed able to access public information directly, and to identify the barriers that household members face. If a household survey only asks about the availability of ICTs, technology and other information sources it risks over-estimating actual use. Thus current international data used to estimate access to information based on mobile phone subscriptions and internet connections at the household level are in some cases a major under-estimate (where a family has one shared subscription), but in many cases an over-estimate (where a family subscription is not in fact used by all). By asking questions about detailed usage to individual household members this proposal:

- Clarifies clearly who uses technology and who does not.
- Provides more detail on patterns of use of different applications which can be used to develop services by public authorities and private providers.
- Identifies specific barriers to access to information which can be addressed through public policy.

The ultimate objective of information policy is that the public should be able to access the information sources that they need and a household survey can judge whether this has been achieved.

The questions presented below were drawn from existing surveys in the Asia-Pacific region especially those from Republic of Korea where the information society is most advanced. Some of the original survey questionnaires exist in English, but where they

do not, the questions were translated especially for this report, and the supporting methodological documents were examined in the original language. The question items were mostly extracted from 'Survey on the Internet Usage' developed by Korean Communications Commission (KCC) and Korea Internet and Security Agency (KISA), Republic of Korea. This survey has been carried out annually since 2005, and has been revised and validated through implementation. The 'Annual Survey on Infocomm Usage in Household and by Individuals' developed by iDA, Singapore, 'Adults' Media Literacy in the Nations: Summary report' by Ofcom, UK were also used. The detailed sources can be found in appendix 2.

It may be considered that the model survey privileges ICTs as a source of information over more traditional media. This is because existing statistical, as opposed perhaps to opinion, surveys tend to concentrate on use of ICTs, and secondly because ICTs are technical devices that may require detailed technical questions. When the questionnaires are examined in detail it will be seen that they also include a significant number of potential questions about more 'traditional' media.

Information Literacy Questionnaire

The six steps in Figure 1 are widely used to develop surveys. This process was used to develop frameworks for the International Adult Literacy Survey (OECD and STATCAN, 1995; OECD and HRDC, 1997; OECD and STATCAN, 2000) and the ICT Literacy Framework (ETS, 2002). In order to develop the prototype questionnaire on information literacy step 1 to step 3 were followed. Step 4 to step 6 need to be undertaken by national experts to validate and refine the questionnaire, and relate it to local contexts.

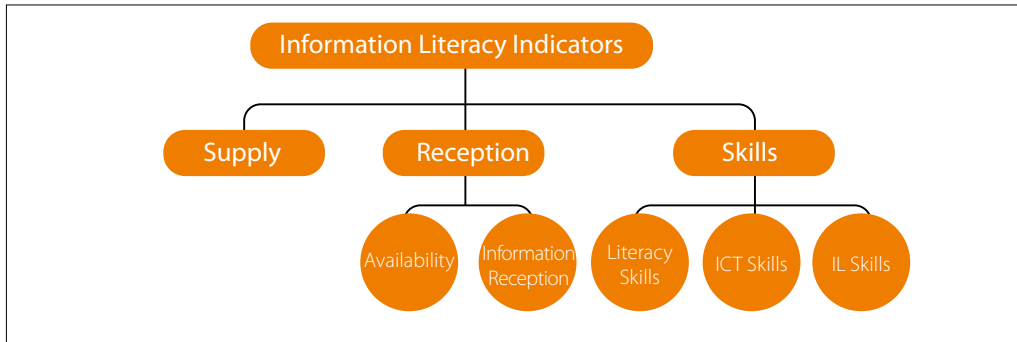
Figure 1: Process for Developing Frameworks for a Survey



For the first step, defining information literacy, the definition adopted by UNESCO's Information for All Programme (IFAP) was used. According to it, information literacy is the capacity of people to recognise their information needs, locate and evaluate the quality of information, store and retrieve information, make effective and ethical use of information, and apply information to create and communicate knowledge.

In the next step, organizing the domain, potential indicators on information literacy (Catts, Lau and Ellis, 2008) were used, to consider information literacy in terms of supply, availability, information reception and skills (Figure 2).

Figure 2: Information Literacy Indicators



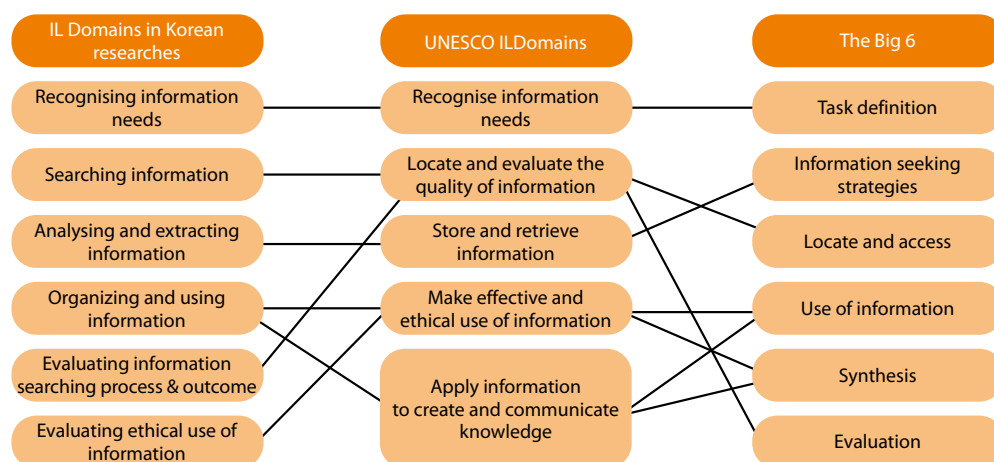
Supply reflects the degree to which government or other official national agencies supply information through a variety of channels to the public. This information is normally collected from the information providers responsible rather than households. *Reception* reflects the degree to which people actually receive the information that is supplied and divided into two groups: availability and information reception. *Availability* is the degree to which the national supply actually reaches people who may still be prevented from using the information by social and economic barriers. *Information reception* is concerned with the information that people look at and actually use. *Skills* consist of literacy skills, ICT skills and information literacy skills. Literacy refers to a context-bound continuum of reading, writing and numeracy skills, acquired and developing through the process of learning and application, in schools and in other setting appropriate to youth and adults (UNESCO, 2005).

Lastly, potential indicators on information literacy by Catts, Lau and Ellis (2008) and household survey-based literacy module developed UIS (2008) were used to identify task characteristics of each domain. Availability can be measured by percentage of households with a radio, TV, internet access, etc., and people's information reception can be collected by percentage of households reporting they read a newspaper, listen to a radio, watch TV, use on-line media, etc.

To develop survey questions the questionnaire items and concepts in the previous studies on information literacy were extracted. The UNESCO IL domains have similarities to those in other studies although the used terms are slightly different (Figure 3). According to a Korean study conducted by Ahn and Kim (2003), information literacy skills consist of 6 domains, recognising information needs, searching information, analyzing and extracting information, organizing and using information, evaluating information search process and outcome, and evaluating ethical use of information. Ahn and Kim developed a self-assessment tool on information literacy consisting of 49 items with 5 Likert-scales. The questionnaire items extracted were used for questions in 'B.5, Information Literacy Skills

Acquisition’ in this report. UNESCO IL domains also have similarities with the Big 6 model developed by Eisenberg (2008). The definitions of each domain in the Big 6 model were used for developing questionnaire items in B.5 as well.

Figure 3: Information Literacy Domains



Module Contents

The prototype questionnaire on information literacy and ICT usage consists of 3 sections; one household module and two individual modules on information literacy and ICT usage. Countries can choose 1 or 2 modules, or extract only the questions that meet their needs.

The *household module* asks for basic information on the household (incl. household members), availability (access) to information, and information reception. The household module has to be completed by the household head or designate.

The individual module on *information literacy* consists of six categories; basic information, individual availability (access) to information, information reception, literacy skills acquisition, ICT skills acquisition and information skills acquisition.

The individual module on *ICT use* consists of five categories; mobile phone usage (incl. smartphone usage), e-mail usage, SNS usage, and internet shopping usage. This module is only for those who have used the internet or a mobile phone before.

Limitations

The Asia-Pacific region presents a wide diversity including some of the world's most advanced information-driven societies, and some that are at the very early stages of development. The following document does not provide a 'ready-made' questionnaire so much as a databank of questions that countries should use to pick out most relevant items for their needs.

Countries will also need to consider other important elements of statistical methods such as sampling and data collection method. Countries will choose the most appropriate approach to suit their objectives and their budget ranging from nation wide survey using face-to-face interviews, to cheaper options using e-mail and targeted samples (e.g., internet users ages 12 to 49).

Survey Questionnaires

Summary

These questionnaires ask for information from households and individuals including the following:

- *Availability of public information*; newspapers, radio, TV, PC and internet, telephone fixed/mobile, nearest library and internet café
- *Information reception*; which 'channels' used most frequently, reading books/newspaper, listening/watching radio/TV, ICT/internet
- *Literacy and ICT skills*; knowledge of languages, material read and where obtained
- *Information Literacy skills*; writing letters, recognizing copyright and intellectual property, evaluating facts and opinions
- *ICT usage*; downloads games/videos, social networking, banking, e-government, blogs, e-mail, virtual worlds

NOTE: the wording of the questions has been kept as close as possible to the original text with minimal changes to maintain fluency. Readers are referred to the original sources listed at the end of the document for information on validity and reliability of responses.

For Surveyor

- District Code

--	--	--	--	--	--

- Household Code

--	--	--	--	--	--

- Interview Date

		/			/				
Date			Month			Year			

- Surveyor's name

.....

For a Respondent of Household Module

- Mailing address:.....

- City:.....

- Postal Code:.....

(Only for households who have below)

- Telephone:.....

- Mobile Phone:.....

- E-mail:.....

Section A: Household Module

The questionnaire should be completed by the household head or designate. Please provide details below of the person responsible for completing this questionnaire. This will all be handled in a totally confidential way.

A.0 Basic Information

A.0a	Family name		A.0b	First name	
A.0c	Age		A.0d	Gender	☐ ₁ Male ☐ ₂ Female
A.0e	Nationality		A.0f	Ethnicity	
A.0g	Primary language		A.0h	Occupation	
A.0i	Type of house	☐ ₁ A detached house ☐ ₂ An apartment, condominium ☐ ₃ A multiplex house ☐ ₄ Other	A.0j	Annual income of Household	☐ ₁ Below 20,000 USD ☐ ₂ 20,001 - 30,000 USD ☐ ₃ 30,001 - 40,000 USD ☐ ₄ 40,001 - 50,000 USD ☐ ₅ 50,001 - 60,000 USD ☐ ₆ 60,001 USD and over

A.1 Availability (Access)

A.1.1 Do you have following devices at home? Please tick all that apply and write down the number of workable devices if you have more than one. (Please include personal assets of your household members as well.)

	Items	Yes	No	Number of workable devices
A.1.1a	TV	☐ ₁	☐ ₂	units
A.1.1b	Digital TV (excl. Analogue)	☐ ₁	☐ ₂	units
A.1.1c	Radio	☐ ₁	☐ ₂	units
A.1.1d	Land phone	☐ ₁	☐ ₂	units
A.1.1e	Desktop computer	☐ ₁	☐ ₂	units
A.1.1f	DVD player/recorder	☐ ₁	☐ ₂	units
A.1.1g	Digital camera	☐ ₁	☐ ₂	units
A.1.1h	Digital camcorder	☐ ₁	☐ ₂	units
A.1.1i	Game console	☐ ₁	☐ ₂	units
A.1.1j	VoIP (internet phone)	☐ ₁	☐ ₂	units
A.1.1k	Notebook computer (incl. netbook, tablet PC, etc.)	☐ ₁	☐ ₂	units

	Items	Yes	No	Number of workable devices
A.1.1l	PDA (Personal Digital Assistant)	☐ ₁	☐ ₂	units
A.1.1m	Mobile phone	☐ ₁	☐ ₂	units
A.1.1n	Smartphone, PDA Phone	☐ ₁	☐ ₂	units
A.1.1o	PMP (Portable Multimedia Player)	☐ ₁	☐ ₂	units
A.1.1p	MP3 Player	☐ ₁	☐ ₂	units
A.1.1q	Electronic dictionary	☐ ₁	☐ ₂	units
A.1.1r	E-book device	☐ ₁	☐ ₂	units
A.1.1s	Other	☐ ₁	☐ ₂	units

If 'Others' is ticked, please specify:.....

A.1.1.1 [Only for a household which has a computer at home] What is the model of your computer at home?

	Below Pentium I	Pentium II	Pentium III	Pentium IV and over	Don't know
Computer (or laptop) 1	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
Computer (or laptop) 2	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
Computer (or laptop) 3	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

A.1.1.2 [Only for a household which doesn't have a computer at home] What are the reasons for not having access to a computer at home?

- ☐₁ Have no need or interest
☐₂ Lack of confidence, knowledge or skills
☐₃ Too costly to purchase a computer
☐₄ Other

If 'Other' is ticked, please specify:.....

A.1.2 Does your household subscribe to a newspaper?

- ☐₁ Yes ☐₂ No

A.1.3 Does your community have an internet cafe?

- ☐₁ Yes ☐₂ No (↘ Go to A.1.4) ☐₃ Don't know (↘ Go to A.1.4)

A.1.3.1 If yes in question A.1.3, how far away is the nearest one from your house?

- ☐₁ Less than 10 minutes away
☐₂ 10-60 minutes away
☐₃ More than 60 minutes away

A.1.4 Does your household have the internet access at home?

- ☐₁ Yes ☐₂ No (➤ Go to A.1.4.4)

A.1.4.1 How long ago did you use first for get any type of the internet access at home?

- ☐₁ Over 5 years ago
☐₂ 1-5 years ago
☐₃ In the last year
☐₄ Don't know

A.1.4.2 Please select all devices that your household possesses for accessing the internet at home regardless of whether it is used.

Desktop Computer	Notebook Computer (Laptop)	Mobile phone	PDA, PMP	Internet-enabled game console	Internet-enabled TV	VoIP	Other
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇	☐ ₈

If 'Other' is ticked, please specify:.....

A.1.4.3 Please select all types of the internet connection you use at home.

Modem (56K Dial-up)	Cable Modem	xDSL (ADSL, VDSL)	Optic LAN	ISDN	Wireless LAN	Mobile phone Wireless LAN	Wireless Broadband	Don't know	Other
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇	☐ ₈	☐ ₉	☐ ₁₀

If 'Other' is ticked, please specify:.....

A.1.4.4 [Only for a household which doesn't have internet access at home] What are the reasons for not having access to the internet at home?

Have no need or interest	Lack of confidence, knowledge or skills	Subscription to the internet is too costly	Equipment cost	Concern that content is harmful	Privacy concerns	Security concerns	Have access to the internet elsewhere	Other
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇	☐ ₈	☐ ₉

If 'Other' is ticked, please specify:.....

A.1.5 Does your community have a library?

- ☐₁ Yes ☐₂ No (↘ Go to A.1.6) ☐₃ Don't know (↘ Go to A.1.6)

A.1.5.1 If yes in question A.1.5, how long does it take you to reach it?

- ☐₁ Less than 10 minutes away
☐₂ 10-60 minutes away
☐₃ More than 60 minutes away

A.1.6 Does your community centre provide any kind of training program in ICT or information literacy?

- ☐₁ Yes ☐₂ No ☐₃ Don't know

A.2 Information Reception

A.2.1 How does your family get the information it needs for daily life? Please tick three that apply and write down the order of frequency (1=most frequent) in brackets.

TV	Newspaper	Radio	Books, magazines	Internet	Acquaintance	Community centre(incl. community newsletter)	Other
☐ ₁ ()	☐ ₂ ()	☐ ₃ ()	☐ ₄ ()	☐ ₅ ()	☐ ₆ ()	☐ ₇ ()	☐ ₈ ()

If 'Other' is ticked, please specify:.....

A.2.2 Which media does your family use the most to get the following information? Please tick three that apply and write down the order of frequency (1=most frequent) in brackets.

		TV	Newspaper	Radio	Books, magazines	Internet	Acquaintance	Community centre	Other
A.2.2a	Business, politics, economic news	☐ ₁ ()	☐ ₂ ()	☐ ₃ ()	☐ ₄ ()	☐ ₅ ()	☐ ₆ ()	☐ ₇ ()	☐ ₈ ()
A.2.2b	Arts, Entertainment, or sports	☐ ₁ ()	☐ ₂ ()	☐ ₃ ()	☐ ₄ ()	☐ ₅ ()	☐ ₆ ()	☐ ₇ ()	☐ ₈ ()
A.2.2c	Related to work or study	☐ ₁ ()	☐ ₂ ()	☐ ₃ ()	☐ ₄ ()	☐ ₅ ()	☐ ₆ ()	☐ ₇ ()	☐ ₈ ()
A.2.2d	Good, services, or shopping	☐ ₁ ()	☐ ₂ ()	☐ ₃ ()	☐ ₄ ()	☐ ₅ ()	☐ ₆ ()	☐ ₇ ()	☐ ₈ ()
A.2.2e	Work search or job search	☐ ₁ ()	☐ ₂ ()	☐ ₃ ()	☐ ₄ ()	☐ ₅ ()	☐ ₆ ()	☐ ₇ ()	☐ ₈ ()

		TV	Newspaper	Radio	Books, magazines	Internet	Acquaintance	Community centre	Other
A.2.2f	Health or health services	☐ ₁ ()	☐ ₂ ()	☐ ₃ ()	☐ ₄ ()	☐ ₅ ()	☐ ₆ ()	☐ ₇ ()	☐ ₈ ()
A.2.2g	Education or training	☐ ₁ ()	☐ ₂ ()	☐ ₃ ()	☐ ₄ ()	☐ ₅ ()	☐ ₆ ()	☐ ₇ ()	☐ ₈ ()
A.2.2h	Financial information	☐ ₁ ()	☐ ₂ ()	☐ ₃ ()	☐ ₄ ()	☐ ₅ ()	☐ ₆ ()	☐ ₇ ()	☐ ₈ ()
A.2.2i	Leisure, Travel	☐ ₁ ()	☐ ₂ ()	☐ ₃ ()	☐ ₄ ()	☐ ₅ ()	☐ ₆ ()	☐ ₇ ()	☐ ₈ ()
A.2.2j	Local community services or activities	☐ ₁ ()	☐ ₂ ()	☐ ₃ ()	☐ ₄ ()	☐ ₅ ()	☐ ₆ ()	☐ ₇ ()	☐ ₈ ()

If 'Others' is ticked, please specify:.....

A.3 Household Members

In this part, we would like to ask about the household members who live in your house. Please include all household members (incl. family, relatives, etc.) who have lived together over the last month. (excl. family who has moved out due to marriage, study, etc.)

A.3.1	A.3.2	A.3.3	A.3.4	A.3.5	A.3.6	A.3.7
HH member code	Name of the HH members	Relationship to Head of HH	Gender	Age	Impairment	Person eligible for personal questions
		1. Head 2. Spouse 3. Own child 4. Adopted child 5. Child's spouse 6. Grand child or his/her spouse 7. Parent or grandparent 8. Brother/sister or his/her spouse 9. Other relative 10. Not related 11. Others	1. Male 2. Female		1. None 2. Physical disability 3. Sensory disability 4. Intellectual disability 5. Mental health and emotional disabilities 6. Developmental disability 7. Other	1. Survey completed 2. Not a survey target (incl. long absence) 3. Refused to respond 4. Contact failure 5. Other
01		1. Head	☐ ₁ ☐ ₂			
02			☐ ₁ ☐ ₂			
03			☐ ₁ ☐ ₂			
04			☐ ₁ ☐ ₂			

A.3.1	A.3.2	A.3.3	A.3.4	A.3.5	A.3.6	A.3.7
05			☐ ₁ ☐ ₂			
06			☐ ₁ ☐ ₂			
07			☐ ₁ ☐ ₂			
08			☐ ₁ ☐ ₂			
09			☐ ₁ ☐ ₂			
10			☐ ₁ ☐ ₂			
Total Number of HH members			Number of HH members who are able to complete the questionnaires			
Number of HH members who go to school						

Section B: Individual Module: Information Literacy

This section should be completed by only for those whose ages are 11 and above. This information will be kept confidential.

B.0 Basic Information

B.0a	HH member code	
B.0b	Nationality	
B.0c	Ethnicity	
B.0d	Primary language	
B.0e	Marital status	☐ ₁ Married ☐ ₂ Never married ☐ ₃ Other (Divorced, Separated, Widowed, etc.)
B.0f	Highest level of education completed (or attending)	☐ ₁ None ☐ ₂ Primary education or equivalent (ISCED 1) ☐ ₃ Lower secondary education or equivalent (ISCED 2) ☐ ₄ Upper secondary education or equivalent (ISCED 3) ☐ ₅ Post-secondary non-tertiary education or equivalent (ISCED 4) ☐ ₆ Tertiary education or equivalent (ISCED 5 or higher)
B.0g	Economical status	☐ ₁ Employed ☐ ₂ Self-employed (↘ Go to B.0i) ☐ ₃ Unemployed (↘ Go to B.1) ☐ ₄ Housewife (↘ Go to B.1) ☐ ₅ Full time student (↘ Go to B.1)
B.0h	The status of employment	☐ ₁ Permanent employee ☐ ₂ Temporary employee ☐ ₃ Part-time employee

B.0i	Occupation	☐ Legislators, senior officials and managers ☐ ₂ Professionals ☐ ₃ Technicians and associate professionals ☐ ₄ Clerks ☐ ₅ Service workers and shop and market sales workers ☐ ₆ Skilled agricultural and fishery workers ☐ ₇ Craft and related workers ☐ ₈ Plant and machine operators and assemblers ☐ ₉ Elementary occupations ☐ ₁₀ Armed forces
B.0j	Personal annual income [Adjust to national scale]	☐ Below 10,000 USD ☐ ₂ 10,001 - 20,000 USD ☐ ₃ 20,001 - 30,000 USD ☐ ₄ 30,001 - 40,000 USD ☐ ₅ 40,001 - 50,000 USD ☐ ₆ 50,000 USD and over (× Income from economic activities, incl. part-time job, sideline)

B.1 Availability (Access)

B.1.1 When you need to use following digital devices, do you have access to them?

	Items	Yes	No
B.1.1a	Computer	☐ ₁	☐ ₂
B.1.1b	Internet	☐ ₁	☐ ₂
B.1.1c	Mobile phone	☐ ₁	☐ ₂

B.2 Information Reception

B.2.1 How often do you do following activities in daily life?

	Items	Never	At least once a day	At least once a week but not every day	At least once a month but not every week	Less than once a month
B.2.1a	Watching TV	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.2.1b	Reading a newspaper	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.2.1c	Listening to the radio	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.2.1d	Reading a magazine/ book	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.2.1e	Watching a movie	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.2.1f	Using a computer	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

	Items	Never	At least once a day	At least once a week but not every day	At least once a month but not every week	Less than once a month
B.2.1g	Using the internet	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.2.1h	Using a mobile phone	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

B.2.1.1 How many hours do you spend on following activities? Please choose a unit first, then write down the average time. (If never is ticked in B.2.1, please leave it with a blank).

	Items	Unit		Time
B.2.1.1a	Watching TV	☐ ₁ A day ☐ ₃ A Month ☐ ₅ A year	☐ ₂ A week ☐ ₄ 6 months	hours minutes
B.2.1.1b	Reading a newspaper	☐ ₁ A day ☐ ₃ A Month ☐ ₅ A year	☐ ₂ A week ☐ ₄ 6 months	hours minutes
B.2.1.1c	Listening to the radio	☐ ₁ A day ☐ ₃ A Month ☐ ₅ A year	☐ ₂ A week ☐ ₄ 6 months	hours minutes
B.2.1.1d	Reading a magazine/ book	☐ ₁ A day ☐ ₃ A Month ☐ ₅ A year	☐ ₂ A week ☐ ₄ 6 months	hours minutes
B.2.1.1e	Watching a movie	☐ ₁ A day ☐ ₃ A Month ☐ ₅ A year	☐ ₂ A week ☐ ₄ 6 months	hours minutes
B.2.1.1f	Using a computer	☐ ₁ A day ☐ ₃ A Month ☐ ₅ A year	☐ ₂ A week ☐ ₄ 6 months	hours minutes
B.2.1.1g	Using the internet	☐ ₁ A day ☐ ₃ A Month ☐ ₅ A year	☐ ₂ A week ☐ ₄ 6 months	hours minutes
B.2.1.1h	Using a mobile phone	☐ ₁ A day ☐ ₃ A Month ☐ ₅ A year	☐ ₂ A week ☐ ₄ 6 months	hours minutes

B.2.1.2 Which, if any, of these are the main reasons why you do following activities?

	Items	To pass the time	For fun	To relax	To keep up to date with sports	To find out or learn things	To keep up to date with news	For contact with other people
B.2.1.2a	Watching TV	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	
B.2.1.2b	Reading a newspaper	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	
B.2.1.2c	Listening to the radio	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	
B.2.1.2d	Reading a magazine/ book	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	
B.2.1.2e	Watching a movie	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	
B.2.1.2f	Using a computer	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	
B.2.1.2g	Using the internet	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇
B.2.1.2h	Using a mobile phone	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇

B.2.2 How do you get the information you need for daily life? Please tick three that apply and write down the order of frequency (1=most frequent) in brackets.

TV	Newspaper	Radio	Books, magazines	Internet	Acquaintance	Community centre (incl. community newsletter)	Other
☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}	☐ _{8()}

If 'Other' is ticked, please specify:.....

B.2.2.1 Which media do you mostly use to get the following information? Please tick three that apply and write down the order of frequency (1=most frequent) in brackets.

		TV	Newspaper	Radio	Books, magazines	Internet	Acquaintance	Community centre	Other
B.2.2.1a	Business, politics, economic news	☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}	☐ _{8()}
B.2.2.1b	Arts, entertainment, or sports	☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}	☐ _{8()}
B.2.2.1c	Related to work or study	☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}	☐ _{8()}
B.2.2.1d	Goods, services, or shopping	☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}	☐ _{8()}
B.2.2.1e	Work search or job search	☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}	☐ _{8()}

		TV	Newspaper	Radio	Books, magazines	Internet	Acquaintance	Community centre	Other
B.2.2.1f	Health or health services	☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}	☐ _{8()}
B.2.2.1g	Education or training	☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}	☐ _{8()}
B.2.2.1h	Financial information	☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}	☐ _{8()}
B.2.2.1i	Leisure, travel	☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}	☐ _{8()}
B.2.2.1j	Local community services or activities	☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}	☐ _{8()}

If 'Others' is ticked, please specify:.....

B.2.3 Thinking about media more generally, how reliable and accurate would you rate the information found in.....?

	Items	Totally unreliable and inaccurate	Unreliable and inaccurate	Insure	Reliable and accurate	Totally reliable and accurate
B.2.3a	TV	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.2.3b	Newspaper	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.2.3c	Books, magazines	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.2.3d	Radio	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.2.3e	Internet	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

B.2.4 How do you contact or socialize with family, friends or colleagues in daily life?

Please tick three that apply and write down the order of frequency (1=most frequent) in brackets.

		Mail (e.g. letter, post card)	Wire telephone	Voice call by mobile phone	Text message by mobile phone	Internet (e.g. e-mail, instant messenger, blog, SNS)	Meeting others in person	Other
B.2.4a	Family	☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}
B.2.4b	Friends	☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}
B.2.4c	Colleagues	☐ _{1()}	☐ _{2()}	☐ _{3()}	☐ _{4()}	☐ _{5()}	☐ _{6()}	☐ _{7()}

B.3 Literacy Acquisition

NOTE: literacy is best assessed through a complex skills assessment process. This requires a dedicated survey, and is here replaced by a broader usage measure.

B.3.1 Please tick one that applies for each questions.

	Item	Fluently	With some difficulty	Not at all
B.3.1a	Can you read personal letters in the following languages?			
	Language 1	☐ ₁	☐ ₂	☐ ₃
	Language 2	☐ ₁	☐ ₂	☐ ₃
	Other (Specify:.....)	☐ ₁	☐ ₂	☐ ₃
B.3.1b	Can you read newspapers in the following languages?			
	Language 1	☐ ₁	☐ ₂	☐ ₃
	Language 2	☐ ₁	☐ ₂	☐ ₃
	Other (Specify:.....)	☐ ₁	☐ ₂	☐ ₃
B.3.1c	Can write a personal letter or short note such as a message for the family in the following languages?			
	Language 1	☐ ₁	☐ ₂	☐ ₃
	Language 2	☐ ₁	☐ ₂	☐ ₃
	Other (Specify:.....)	☐ ₁	☐ ₂	☐ ₃

B.3.2 In the past 12 months, how often have you read the following items? Please tick one in each row.

	Not available	Cannot	Never	A few times in a year	A few times in a month	A few times in a week	Daily	
B.3.2a	Road signs or names of store	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇
B.3.2b	Posters, pamphlets, announcements, notice boards, telegram	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇
B.3.2c	Personal messages, letters or e-mails	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇
B.3.2d	Newspaper or magazines	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇
B.3.2e	Fiction or non-fiction books	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇
B.3.2f	Manuals or reference books	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇
B.3.2g	Bills, invoices, budget tables	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇
B.3.2h	Chart, diagrams, or maps	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇

B.3.3 In the past 12 months, how often have you visited the following places? Please tick one in each row.

		Not available	Cannot	Never	A few times in a year	A few times in a month	A few times in a week	Daily
B.3.3a	Public library	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇
B.3.3b	Bookstore	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇
B.3.3c	Newsstand	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇
B.3.3d	Community centre	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇
B.3.3e	Internet/telecentre/ cybercafé	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇

B.4 ICT Skills Acquisition

B.4.1 Do you use a computer?

☐₁ Yes ☐₂ No (➤ Go to B.4.2)

B.4.1.1 Can you use following functions on a computer?

	Items	Never	Poor	Fair	Good
B.4.2a	Operating System (OS) and utility programs (e.g., Window, LINUX, Macintosh)	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2b	Word processor (e.g., MS word)	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2c	Spread sheet (e.g., MS excel)	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2d	Computer game	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2e	Multimedia program	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2f	Presentation (e.g., PowerPoint)	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2g	Computer graphic software (e.g., Photoshop, Flash, Illustrator)	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2h	Homepage making	☐ ₁	☐ ₂	☐ ₃	☐ ₄

B.4.2 Do you use the internet?

☐₁ Yes ☐₂ No (➤ Go to B.5.1)

B.4.2.1 Can you use following functions on the internet?

	Items	Never	Poor	Fair	Good
B.4.2.1a	Web browsing (e.g., internet explorer)	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2.1b	Searching data or information	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2.1c	Chatting (messenger)	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2.1d	Using e-mail	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2.1e	Online game	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2.1f	Internet-based multimedia (e.g., watching movie, TV, listening to music, reading newspaper/magazine)	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2.1g	Online transaction (e.g., internet banking, stock trading, internet shopping, online reservation)	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2.2h	Using e-government and participating in online discussion (e.g., paying bill, filing a civil complaint, posting on web board or internet community)	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2.2i	Managing website	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2.2j	Blog	☐ ₁	☐ ₂	☐ ₃	☐ ₄
B.4.2.2k	Social networking	☐ ₁	☐ ₂	☐ ₃	☐ ₄

B.4.3 Which of these are ways you prefer to learn about using a computer or the internet?

Ask friends/family	Read the manual	Trial and error	Supplier/store	Go to a class	Other
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆

If 'Others' is ticked, please specify:.....

B.4.4 Have you ever taken a training course about computing or the internet in the last 12 months?

☐₁ Yes ☐₂ No (➤ Go to B.5.1)

B.4.4.1 If yes in B.4.4, where did you take the course? Please tick all that apply.

At school	At work	At a community centre	At a private institution	Other
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

If 'Others' is ticked, please specify:.....

B.4.4.2 Did you find it useful?

Disagree	Somewhat disagree	Not sure	Somewhat agree	Agree
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

B.5 Information Literacy Skills Acquisition

NOTE: many questions in this module ask respondents to rate their own work. This is common practice in information literacy surveys.

B.5.1 How often have you ever carried out the following activities in the past 12 months?

	Item	Never	At least once a day	At least once a week	At least once a month	Less than once a month
	Recognize information needs					
B.5.1a	Searching for information using any kind of media regarding work (study)	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.1b	Searching for information using any kind of media regarding housework or personal interests (leisure, hobby, travel, weather, shopping, health, etc.)	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
	Locate and evaluate the quality of Information					
B.5.1c	Using library resources to complete an assignment or work	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.1d	Searching all possible sources to complete assignment or work	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.1e	Spell/grammar checking of information what you found	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.1f	Selecting the most useful information from various sources	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
	Store and retrieve information					
B.5.1g	Filling in forms	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.1h	Keeping a schedule or calendar	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.1i	Making a clipping of newspaper or internet news	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.1j	Reading information from a notebook (report) you wrote, or file you have saved	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
	Make effective and ethical use of information					
B.5.1k	Calculations with numbers at work	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.1l	Producing bills, invoices or budget tables	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

	Item	Never	At least once a day	At least once a week	At least once a month	Less than once a month
B.5.1m	Categorizing new information by its contents	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.1n	Organizing information from multiple sources	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.1o	Providing the source of information when using others' article, pictures, or photos	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
Apply information to create and communicate knowledge						
B.5.1p	Producing charts, diagrams or maps	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.1q	Working on a paper or project that required integrating ideas or information from various sources	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.1r	Using letters, messages or e-mail to communicate with an instructor, classmates, or co-workers	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.1s	Using letters, messages or e-mail (chat group, internet, instant messaging, etc.) to discuss or complete an assignment	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

B.5.2 To what extent do you agree with the following statements? Please tick one box each row.

	Item	Disagree	Somewhat Disagree	Unsure	Somewhat Agree	Agree
B.5.2a	If I face a problem in daily life, I can identify the information needed.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.2b	I can determine all possible resources for problem solving.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.2c	I can prioritize the sources.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.2d	I can extract relevant information within various sources.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.2e	I can distinguish whether the information I found is a fact or an opinion.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.2f	I can use the information which I collected in the past to solve the problem.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.2g	I know what 'intellectual property' is.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
B.5.2h	I acknowledge that I should not copy any information as all information has copyright.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

For a respondent who has never used the internet and a mobile phone before, the survey has completed.

Section C: Individual Module: ICT Usage

This part is only for those who have used the internet and a mobile phone before. For a respondent who has used only the internet, please go to C2.

C.1 Mobile Phone Usage (incl. smartphone usage)

C.1.1 When did you most recently use the mobile phone?

Every day	Within the last 1 week	Between 1 week and 1 month	Between 1 month – 3 months	Between 3 months and 6 months
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

C.1.2 How long have you been using the mobile phone?

☐ ₁ Less than 1 year ☐ ₂ 1-3 years ☐ ₃ 3-5 years ☐ ₄ 5 years and over

C.1.3 How often do you use a mobile phone?

Several times a day	Once a day	3-4 times a week	1-2 times a week	1-3 times a month	Less than once a month
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆

C.1.4 Please tick all the services that you use through the mobile phone.

	Items	Usage
C.1.4a	Sending/receiving text message (SMS, MMS, e-mail)	☐
C.1.4b	Downloading ringtone, wallpaper	☐
C.1.4c	Searching information (e.g. news, weather, traffic)	☐
C.1.4d	Sending/receiving photos	☐
C.1.4e	Downloading music (mp3, incl. streaming)	☐
C.1.4f	Downloading game or online-game	☐
C.1.4g	Downloading video, movie, TV program (incl. streaming)	☐
C.1.4h	Payment for product or service	☐
C.1.4i	Other (Please specify)	☐

C.1.5 Do you use a smartphone?

☐ ₁ Yes ☐ ₂ No (➤ Go to B.2)

C.1.5.1 How long have you been using a smartphone?

☐ ₁ Less than 1 month ☐ ₂ 1-3 months ☐ ₃ 3-6 months
☐ ₄ 6 months - 1 year ☐ ₅ 1 year and over

C.1.5.2 How often do you use a smartphone?

Several times a day	Once a day	3-4 times a week	1-2 times a week	1-3 times a month	Less than once a month
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆

C.1.5.3 What are your reasons for using a smartphone? Please tick all that apply to you.

	Items	Usage
C.1.5.3a	Being able to install and use various mobile applications	☐
C.1.5.3b	Availability of the internet access anywhere	☐
C.1.5.3c	Curiosity for new technology or services	☐
C.1.5.3d	Needs for higher-spec phone	☐
C.1.5.3e	Needed because of work or study	☐
C.1.5.3f	Gift or recommendation from acquaintance or work	☐
C.1.5.3g	Promotion of telecom or mobile phone companies	☐
C.1.5.3h	Other	☐

If 'Other' is ticked, please specify:.....

C.1.5.4 Please tick all the services that you use through a smartphone.

Accessing the internet	Listening to music (MP3)	Watching video clips	GPS (map, Location Based services, etc.)	Camera	Install or use new application	E-mail	Word processor, Spread sheet, Presentation
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇	☐ ₈

If 'Other' is ticked, please specify:.....

C.1.5.5 How long do you use the internet on smartphone in a day?

Never	Less than 5 minutes	5-10 min	10-30 min	30 min – 1 hr	1-2 hr	2 hr and over
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇

C.1.5.6 Do you agree with the following statements about using a smartphone?

	Items	Disagree	Somewhat disagree	Unsure	Somewhat agree	Agree
C.1.5.6a	My internet use has increased since using a smartphone.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
C.1.5.6b	My communication and sharing information with others has increased since using a smartphone.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

	Items	Disagree	Somewhat disagree	Unsure	Somewhat agree	Agree
C.1.5.6c	A smartphone is effective for study or work productivity.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
C.1.5.6d	I use a smartphone although being able to use internet at work or home.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
C.1.5.6e	Using a smartphone is difficult.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

For a respondent who has never used the internet before, the survey is completed.

C.2 Internet Usage

C.2.1 When did you most recently use the internet?

Within the last 1 week	Between 1 week and 1 month	Between 1 month – 3 months	Between 3 months and 6 months	Between 6 months and a year	More than a year ago
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆

C.2.2 How long have you been using the internet?

☐₁ Less than 1 year ☐₂ 1-3 years ☐₃ 3-5 years ☐₄ 5 years and over

C.2.3 When do you usually use the internet? Please indicate all the times that apply to you.

In the morning (6 am - 12 pm)	In the afternoon (12 pm - 5 pm)	In the evening (5 pm - 8 pm)	At night (8 pm - 12 am)	At dawn (12 am - 6 am)
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

C.2.4 How long on average do you spend on the internet per each session?

Less than 30 mins	30 mins to less than 1 hour	1 hour to less than 2 hours	2 hours to less than 4 hours	4 hours or more
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

C.2.5 Please select all the devices that you use when accessing the internet.

Desktop Computer	Notebook computer (incl. laptop, netbook, tablet PC)	Mobile phone	PDA, PMP	Internet-enabled game console	Internet-enabled TV	VoIP	Other
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇	☐ ₈

If 'Other' is ticked, please specify:.....

C.2.6 Please tick all the places that you use the internet.

At my home	At another person's home	Place of work	Place of education (e.g. school)	Commercial facility (e.g. internet café, etc.)	Non-commercial facility (e.g. community centre)	Vehicle (e.g. subway, bus)	Anywhere using mobile phone	Other
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇	☐ ₈	☐ ₉

If 'Other' is ticked, please specify:.....

C.2.7 Has your time for various activities changed or stayed the same since you started using the internet?

	Items	Increased	Decreased	Stayed the same
c.2.7a	Watching TV	☐ ₁	☐ ₂	☐ ₃
c.2.7b	Reading book, magazines, newspaper	☐ ₁	☐ ₂	☐ ₃
c.2.7c	Sleeping	☐ ₁	☐ ₂	☐ ₃
c.2.7d	Doing leisure activities at home	☐ ₁	☐ ₂	☐ ₃
c.2.7e	Doing household chores	☐ ₁	☐ ₂	☐ ₃
c.2.7f	Shopping	☐ ₁	☐ ₂	☐ ₃
c.2.7g	Doing leisure activities outside the home	☐ ₁	☐ ₂	☐ ₃
c.2.7h	Visiting and talking to family	☐ ₁	☐ ₂	☐ ₃
c.2.7i	Visiting and talking to friends	☐ ₁	☐ ₂	☐ ₃
c.2.7j	Spending time with children	☐ ₁	☐ ₂	☐ ₃

C.2.8 In most weeks when you use the internet, would you say that you visit new websites?

Don't know	Visit lots of websites that you haven't visited before	Visit maybe one or two sites that you haven't visited before	Only use websites that you've used before
☐ ₁	☐ ₂	☐ ₃	☐ ₄

C.2.9 Which of the activities on this list do you currently use the internet for?

	Items	Usage
	Getting Information or data	
c.2.9a	Goods, services, shopping	☐
c.2.9b	Local services such as cinemas and restaurants	☐
c.2.9c	Job opportunities	☐
c.2.9d	Health issues or health services	☐
c.2.9e	Government or local council	☐

	Items	Usage
c.2.9f	Other information or general web browsing	☐
	Communicating	
c.2.9g	Sending/receiving e-mails	☐
c.2.9h	Chatting, instant messenger	☐
c.2.9i	Posting comments to web board	☐
c.2.9j	Joining in debates online or giving your opinion on social or political issues	☐
c.2.9k	VoIP	☐
	Leisure activities	
c.2.9l	Downloading or listening to online music	☐
c.2.9m	Listening to radio over a computer	☐
c.2.9n	Transfer photos from the digital camera or mobile phone to a computer	☐
c.2.9o	Playing computer game or video game (incl. downloading games)	☐
c.2.9p	Watching video (movie, TV program) or downloading	☐
c.2.9q	Reading or downloading e-book, magazines, newspapers	☐
	Internet shopping and selling	
c.2.9r	Purchasing goods or services (incl. reservation, ticketing)	☐
c.2.9s	Selling goods or services	☐
	Education/Learning	
c.2.9t	Formal education or training activities	☐
c.2.9u	Informal education or training activities	☐
	Financial Transaction	
c.2.9v	Internet banking	☐
c.2.9x	Internet stock trading	☐
c.2.9y	Making online payment (tax, utility bills)	☐
	Socializing	
c.2.9z	Managing personal homepage or Blog (Web page)	☐
c.2.9ab	SNS (Facebook, Twitter, etc.)	☐
	Electronic civil affairs	
c.2.9ac	Issuing official documents	☐
c.2.9ad	Downloading or requesting government forms	☐
c.2.9ae	Complete government processes online	☐
c.2.9af	Sign an online petition	☐
	Other	
c.2.9ag	Software download/upgrade	☐
c.2.9ah	Install security features like a firewall, anti-spy or antivirus software	☐
c.2.9ai	File share service (P2P)	☐

C.2.10 Do you agree with the following statements about using the internet?

	Items	Disagree	Somewhat disagree	Somewhat agree	Agree
c.2.10a	The internet is important for studying or work.	☐ ₁	☐ ₂	☐ ₃	☐ ₄
c.2.10b	The internet is important for housework, personal life.	☐ ₁	☐ ₂	☐ ₃	☐ ₄
c.2.10c	The internet is important for leisure.	☐ ₁	☐ ₂	☐ ₃	☐ ₄
c.2.10d	The internet is important for social activities.	☐ ₁	☐ ₂	☐ ₃	☐ ₄
c.2.10e	The internet is important for communicating and socializing.	☐ ₁	☐ ₂	☐ ₃	☐ ₄
c.2.10f	The internet makes life easier.	☐ ₁	☐ ₂	☐ ₃	☐ ₄
c.2.10g	The internet helps save time.	☐ ₁	☐ ₂	☐ ₃	☐ ₄
c.2.10h	The internet is difficult to use.	☐ ₁	☐ ₂	☐ ₃	☐ ₄
c.2.10i	People who buy things online put their privacy at risk.	☐ ₁	☐ ₂	☐ ₃	☐ ₄

C.3 E-Mail Usage

C.3.1 When did you most recently use e-mail?

Within the last 1 week	Between 1 week and 1 month	Between 1 month – 3 months	Between 3 months and 6 months	Between 6 months and a year	More than a year ago	Never (↘ Go to C.4.1)
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇

C.3.2 How long have you been using e-mail?

☐₁ Less than 1 year ☐₂ 1-3 years ☐₃ 3-5 years ☐₄ 5 years and over

C.3.3 How often do you typically use e-mail?

- ☐₁ At least once a day
☐₂ At least once a week but not every day
☐₃ At least once a month but not every week
☐₄ Less than once a month

C.3.4 What are the purposes of e-mails you mostly send or receive? Please tick three that apply to you.

Maintaining relationship with acquaintances	Work related e-mails	File transfer (document, photo, music, video, etc.)	Online bills such as utility bills, credit cards, mobile phone	Regularly e-mail (news letter, shopping letter)	Other
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆

If 'Other' is ticked, please specify:.....

C.4 SNS (Social Networking Service) Usage

In this survey, SNS refers to internet service that connects users with other users through the internet, allowing them to build, sustain and manage their social relationships. It includes the following services : Blog, Instant messenger (MSN), Personal networking site (Facebook, Myspace, Twitter, etc.)

C.4.1 When did you most recently use the SNS?

Within the last 1 week	Between 1 week and 1 month	Between 1 month – 3 months	Between 3 months and 6 months	Between 6 months and a year	More than a year ago	Never (↘ Go to C.5.1)
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇

C.4.2 How long have you been using the SNS?

☐ ₁ Less than 1 year ☐ ₂ 1-3 years ☐ ₃ 3-5 years ☐ ₄ 5 years and over

C.4.3. How often do you typically use the SNS?

- ☐ ₁ At least once a day
☐ ₂ At least once a week but not every day
☐ ₃ At least once a month but not every week
☐ ₄ Less than once a month

C.4.4 Please tick all the services that you use.

Personal networking site (Facebook, Myspace, Twitter, etc.)	Blog	Instant messenger (MSN, etc.)	Online community	Virtual reality service (e.g. Second Life)	Other
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆

If 'Other' is ticked, please specify:.....

C.4.5 What is your motivation for using SNS? Please tick all that apply to you.

	Items	Usage
C.4.5a	To socialize better	☐
C.4.5b	To share personal life and common interests	☐
C.4.5c	To share information and knowledge	☐
C.4.5d	To satisfy curiosity or for fun and pleasure	☐
C.4.5e	To get information on various subjects	☐

	Items	Usage
C.4.5f	To help with business, work, or school	☐
C.4.5g	To answer to an invitation from a member	☐

If 'Other' is ticked, please specify:.....

C.4.6 What is your purpose of using SNS? Please tick all that apply to you.

	Items	Usage
C.4.6a	Socializing	☐
C.4.6b	Sharing personal life and common interests	☐
C.4.6c	Hobby and leisure activities	☐
C.4.6d	Getting information or personal life	☐
C.4.6e	Entertainment for fun and pleasure	☐
C.4.6f	Getting information on business, work and school	☐
C.4.6g	Expressing and sharing opinion on current events	☐
C.4.6h	Other	☐

If 'Other' is ticked, please specify:.....

C.4.7. Have you ever done the following activities when using SNS?

	Items	Disagree	Somewhat disagree	Unsure	Somewhat agree	Agree
c.4.7a	Get/Receive help at work, school or daily life	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
c.4.7b	Post replies to others' posts or sent messages to others	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
c.4.7c	Search for information on past acquaintances or persons they know offline	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
c.4.7d	Block our relationships formed on SNS	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
c.4.7e	SNS usage hours gradually increased	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
c.4.7f	Let others know about the changes to personal life on a frequent basis	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
c.4.7g	Participate in discussions on specific issues	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

C.5. Internet Shopping

C.5.1 When did you most recently purchase goods or services through the internet?

Within the last 1 week	Between 1 week and 1 month	Between 1 month – 3 months	Between 3 months and 6 months	Between 6 months and a year	More than a year ago	Never (End of the survey)
☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅	☐ ₆	☐ ₇

C.5.2 How often do you purchase (incl. reservation, booking) goods or services through the internet on average?

☐ ₁ Every day ☐ ₂ Every week ☐ ₃ Every month ☐ ₄ Every 6 months ☐ ₅ Every 5 year

Average times

C.5.3 How much personally do you spend on purchasing (incl. reservation, booking) goods or services through the internet on average?

A monthly average USD

C.5.4 What types of goods or services have you purchased through the internet for private use?

Please select all that apply to you.

	Items	Usage
C.5.4a	Books, magazines or newspaper	☐
C.5.4b	Clothing, footwear, sporting goods, accessories	☐
C.5.4c	Cosmetics	☐
C.5.4d	Computer equipment or parts	☐
C.5.4e	Computer or video games	☐
C.5.4f	Computer software	☐
C.5.4g	Food, groceries (incl. health foods)	☐
C.5.4h	Videos (movies, TV programs)	☐
C.5.4i	Music products	☐
C.5.4j	Telecommunications or optical equipment (camera, mobile phone)	☐
C.5.4k	Reservation or booking	☐
C.5.4l	Electronic products	☐
C.5.4m	Toddler or children products	☐
C.5.4n	Charged contents	☐
C.5.4o	Other	☐

If 'Other' is ticked, please specify:.....

Appendix

Appendix 1: Glossary of Terms and Definition

ADSL (Asymmetric Digital Subscriber Line)	
Questionnaire item: A.1.4.3	Asymmetric Digital Subscriber Line (ADSL) is one form of the Digital Subscriber Line (DSL) technology, a data communications technology that enables faster data transmission over copper telephone lines than a conventional modem can provide.
Blog	
Questionnaire item: B.2.4, B.4.4.2, C.2.9, C.4.4	A blog is an online diary or journal that which is published on a personal website or a diary hosting website.
Broadband	
Questionnaire item: A.1.4.3	The term broadband refers to a telecommunications signal of greater bandwidth, in some sense, than another standard or usual signal (and the broader the band, the greater the capacity for traffic; 256 kbps per second).
Cable Modem	
Questionnaire item: A.1.4.3	A cable modem is a type of network bridge and modem that provides bi-directional data communication via radio frequency channels. Cable modems are primarily used to deliver broadband internet access in the form of cable internet, and commonly deployed in Australia, Europe, Asia and Americas.
Cybercafé	
Questionnaire item: B.3.3	An internet café or cybercafé is a place which provides internet access to the public, usually for a fee.

ADSL (Asymmetric Digital Subscriber Line)

E-book (Electronic book)

Questionnaire item: A.1.1, C.2.9	An electronic book (also e-book, ebook, digital book) is a text and image-based publication in digital form produced on, published by, and readable on computers or other digital devices.
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E-government

Questionnaire item: B.4.4.2	E-Government or also known as Digital Government, refers to how government utilizes IT, ICT and other telecommunication technologies, to enhance the efficiency and effectiveness in the public sector.
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Instant messenger

Questionnaire item: B.2.4, C.2.9, C.4.4	Instant messenger is a form of real-time direct text-based communication method between two or more people using personal computers or other devices, e.g. MSN messenger, Yahoo messenger, etc.
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ISDN (Integrated Services Digital Network)

Questionnaire item: A.1.4.3	ISDN is a set of communications standards for sending voice, video, data over digital telephone lines or normal telephone wires. The standard has been largely superseded by DSL technology.
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Netbook

Questionnaire item: A.1.1, C.2.5	Netbooks are a category of small, lightweight, legacy-free, and inexpensive laptop computers.
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Operating System (OS)

Questionnaire item: B.4.2	An operating system (OS) is software, consisting of programs and data, that runs on computers and manages computer hardware resources.
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PDA (Personal Digital Assistant)

Questionnaire item: A.1.4.2, A.1.1, C.2.5	A Personal Digital Assistant (PDA), also known as a palmtop computer, or personal data assistant, is a mobile device that functions as a personal information manager.
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PMP (Portable Media Player)

Questionnaire item: A.1.1, A.1.4.2, C.2.5	PMP refers to a handheld electronic device that supports the playback of digital media.
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Smartphone

Questionnaire item: A.1.1, C.1.5 (C.1.5.1-C.1.5.6)	High-end mobile phone which has a wide use Operating System (OS) inside like PC so that people can install and use various mobile app freely. Also called "PC in hands" e.g. iPhone, blackberry, etc.
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ADSL (Asymmetric Digital Subscriber Line)	
SNS (Social Networking Service)	
Questionnaire item: B.2.4, C.2.9, C.4 (C.4.1-C.4.7)	SNS refers to an internet service that connects users with other users through the internet, allowing them to build, sustain and manage their social relationships by managing personal network, sharing information, and self expression. It includes the following services: Blog, Instant Messenger, Personal networking site such as Facebook, Twitter, Myspace, etc.
Tablet PC	
Questionnaire item: A.1.1, C.2.5	A tablet personal computer (tablet PC) is a portable personal computer equipped with a touch screen as a primary input device and designed to be operated and owned by an individual, e.g. iPad
VDSL (Very-high-bitrate DSL)	
Questionnaire item: A.1.4.3	Very-high-bitrate DSL (VDSL or VHDSL) is a DSL technology providing faster data transmission up to 52 Mbit/s downstream and 16 Mbit/s upstream. It is capable of supporting high bandwidth applications such as HDTV, as well as telephone services and general internet access, over a single connection.
VoIP (Voice over Internet Protocol)	
Questionnaire item: A.1.1, A.1.4.2, C.2.5, C.2.9	Voice over Internet Protocol (Voice over IP, VoIP), also know as IP telephone, internet telephone, broadband telephone, is for delivery of voice communications and multimedia sessions over Internet Protocol (IP) networks, such as the internet.
Wireless LAN	
Questionnaire item: A.1.4.3	A wireless local area network (WLAN) links two or more devices using some wireless distribution method and usually providing a connection through an access point to the wider internet.

Appendix 2: Sources

	Conceptual Domains	Questionnaire	Sources (or Adopted from)
A. Household module	A.0 Basic information		UNESCO Bangkok
	A.1 Availability (Access)	A.1.1 Household asset	Republic of Korea
		A.1.1.1 Model of a computer	Republic of Korea
		A.1.1.2 Reasons for not having access to a computer	Singapore
		A.1.2 Subscription to a newspaper	UNESCO Bangkok
		A.1.3 Cybercafé in community	UNESCO Bangkok
		A.1.3.1 Accessibility of an internet café	UNESCO Bangkok
		A.1.4 Internet access within households	UNESCO Bangkok
		A.1.4.1 When the internet was first acquired	UK
		A.1.4.2 Devices used to access internet	Republic of Korea
		A.1.4.3 Type of internet connection	Republic of Korea, Singapore
		A.1.4.4 Reasons for not having access to internet	Republic of Korea, Singapore
		A.1.5 Library in community	UNESCO Bangkok
		A.1.5.1 Accessibility a library	UNESCO Bangkok
		A.1.6 Training program in community	UNESCO Bangkok
	A.2 Information reception	A.2.1 Most used media to get necessary information	UNESCO Bangkok
		A.2.2 Most used media to get necessary information (by specific categories)	UNESCO Bangkok
	A.3 Household members		UNESCO Bangkok

	Conceptual Domains	Questionnaire	Sources (or Adopted from)
B. Individual module : Information literacy	B.0 Basic information		UNESCO Bangkok
	B.1 Availability (Access)	B.1.1 Access to digital devices	UNESCO Bangkok
	B.2 Information reception	B.2.1 Frequency of information usage	Republic of Korea, UNESCO Bangkok
		B.2.1.1 Information usage time in daily life	Republic of Korea, UNESCO Bangkok
		B.2.1.2 Reasons for information usage	UK, UNESCO Bangkok
		B.2.2 Most used media to get necessary information	UNESCO Bangkok
		B.2.2.1 Most used media to get necessary information (by specific categories)	UNESCO Bangkok
		B.2.3 Rating of the reliability and accuracy of the information found	UK, UNESCO Bangkok
		B.2.4 Way of contacting with family, friends or colleagues in daily life	Republic of Korea, UNESCO Bangkok
	B.3 Literacy Skills acquisition		UNESCO Bangkok
	B.4 ICT skills acquisition	B.4.1 Computer use	Republic of Korea
		B.4.1.1 Acquisition of computer skills	
		B.4.2 Internet use	Republic of Korea
		B.4.2.1 Acquisition of the internet skills	Republic of Korea, UNESCO Bangkok
		B.4.3 Preferred ways to learn about using a computer or the internet	UK
		B.4.4 Experience of taking a training course on ICT	UNESCO Bangkok
		B.4.4.1 Place of taking the course	
		B.4.4.2 Satisfaction on the training	
	B.5 Information literacy skills acquisition		UNESCO Bangkok

	Conceptual Domains	Questionnaire	Sources (or Adopted from)
C. Individual Module : ICT usage	C.1 Mobile phone usage	C.1.1 Mobile phone usage rate	Republic of Korea
		C.1.2 Period of using a mobile phone	
		C.1.3 Mobile phone usage frequency	
		C.1.4 Types of mobile phone usage	
		C.1.5 Smartphone usage	
	C.2 Internet usage	C.2.1 When the mobile phone was first acquired	Republic of Korea
		C.2.2 Period of using the internet	UNESCO Bangkok
		C.2.3 Internet usage patterns	Republic of Korea, UNESCO Bangkok
		C.2.4 Internet usage hours	UK
		C.2.5 Types of internet access	Republic of Korea
		C.2.6 Places of using internet	Australia, Republic of Korea, UNESCO Bangkok
		C.2.7 Changes in life pattern after using the internet	Canada
		C.2.8 Visiting new websites	UK
		C.2.9 Types of the internet usage	Republic of Korea, UK
		C.2.10 Perception of the internet users	Republic of Korea, UK
	C.3 E-mail usage	C.3.1 E-mail usage rate	Republic of Korea
		C.3.2 Period of using e-mail	
		C.3.3 Frequency of using e-mail	
		C.3.4 Purposes of using e-mail	
	C.4 SNS usage	C.4.1 SNS usage rate	Republic of Korea
		C.4.2 Period of using SNS	
		C.4.3 Frequency of using SNS	
		C.4.4 Types of SNS usage	
		C.4.5 Motivation for using SNS	
		C.4.6 Purposes of using SNS	
		C.4.7 SNS usage patterns	
	C.5 Internet shopping usage	C.5.1 Internet shopping usage rate	Republic of Korea
		C.5.2 Frequency of using SNS	
		C.5.3 Average expenditure on the internet shopping	
		C.5.4 Internet shopping patterns	

Appendix 3: Photos of the Workshop



→ The National Information Policies Report Production Team.



→ Welcoming of participants and providing an overview of the workshop.



→ Small group discussion comprising of representatives from Iran (Islamic Republic of), Fiji, Malaysia and UNESCO.



→ Group discussion on information society and skills and competencies.



→ Discussions among group 2 members on public sector and e-government.



→ The plenary presentation of group discussion results which allowed other participants to comment.

References

[for part I]

Journals, Books and Reports

Albirini, A. 2006. Cultural Perceptions: The Missing Element in the Implementation of ICT in Developing Countries. *International Journal of Education and Development using ICT*, 2(1), pp. 49-65.

ANACOM. 2008. *Number of Mobile Broadband users Surpasses Number of Fixed Broadband Users for First Time*. <http://www.anacom.pt/render.jsp?categoryId=4599&contentId=585272&channel=print> (Accessed 23 June 2009).

Carr V. H Jr. 1999. Technology Adoption and Diffusion. <http://www.au.af.mil/au/awc/awcgate/innovation/adoptiondiffusion.html> (Accessed 18 January 2011).

Catts, R. & Lau, J. 2008. *Towards Information Literacy Indicators*. Paris, UNESCO. <http://unesdoc.unesco.org/images/0015/001587/158723e.pdf> (Accessed 23 June 2009).

Chatterjee, S. 2003. *Internet transforms public services in remote village Indo-Asian News Service*. New Delhi: Indo-Asian News Service.

Commission on Information and Communications Technology. (n.d). BPO (Business Process Outsourcing) in the Philippines continues to grow as the ICT develops in the country. <http://www.cict.gov.ph> (Accessed 16 July 2009).

Eickelman, F., D. & Anderson, J.W. 2003. *New Media in the Muslim World: the Emerging Public Sphere*. Indiana: Indiana University Press.

Eurostat. 2006. *Methodological Manual for Statistics on the Information Society, Survey year 2006 v2.0*. Luxembourg. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-BG-06-004/EN/KS-BG-06-004-EN.PDF. (Accessed 24 June 2009).

Eurostat. 2007. *Methodological Manual for Statistics on the Information Society, Survey year 2007 v2.0*. Luxembourg. http://europa.eu.int/estatref/info/sdds/en/isoc/isoc_metmanual_2007.pdf. (Accessed 25 June 2009).

Global Technology Forum, 2007. South Korea: Overview of e-commerce. From the Economist Intelligence unit. http://globaltechforum.eiu.com/index.asp?layout=rich_story&doc_id=11157&title=South+Korea%3A+Overview+of+e-commerce&channelid=4&categoryid=30

Grau, J. 2008. Asia-Pacific B2C E-Commerce: Focus on China and India. http://www.emarketer.com/Reports/All/Emarketer_2000455.aspx. (Accessed July 7 2009).

Helsper, E.J. 2008. *Digital Inclusion: An Analysis of Social Disadvantage and the Information Society*. Oxford Internet Institute (OII): Department for Communities and Local Government.

ICT Policy Bangladesh. 2002. National Information and Communication Technology (ICT) Policy, Ministry of Science and Information & Communication Technology Government of the People's Republic of Bangladesh http://www.btrc.gov.bd/policy/ICT_Policy_2002.pdf (Accessed 15 July 2009)

ITU. 2006a. *World Information Society Report 2006*. Geneva: ITU.

ITU. 2006b. *World Telecommunication Development Conference Final Report*. Doha: (WTDC-06).

ITU. 2006c. *World Telecommunication/ICT Development Report 2006: Measuring ICT for Social and Economic Development*. Geneva: ITU.

ITU. 2007a. *Measuring the Information Society – ICT Opportunity Index and World Telecommunication/ICT Indicators*. Geneva: ITU.

ITU. 2007b. *Telecommunication Indicators Handbook*. <http://www.itu.int/ITU-D/ict/handbook.html>. (Accessed 27 June 2009).

ITU. 2007c. *World Telecommunication/ICT Indicators Database*, 11th edn. <http://www.itu.int/ITU-D/ict/publications/world/world.html>. (Accessed 28 June 2009).

Jabbar, M. 2004. Bangladesh. In Karan, K. (ed.). *Cyber Communities in Rural Asia: A Study of Seven Countries*. Singapore: Marshall Cavendish.

Junko, O. 2005. *Challenging Society through the Information grid: Japanese Women's Activism on the Net & Cyber masculinities: the Internet and Men's Groups*. <https://ecommerce.tandf.co.uk/catalogue/DetailedDisplay.asp?SBN=0415279194&ResourceCentre=ROUTLEDGE> (Accessed 16 June 2009).

Karan, K. 2004. *Cyber Communities in Rural Asia: A Study of Seven Countries*. Singapore: AMIC/ Marshall Cavendish.

Kirkpatrick, M. 2009. Hello India! Facebook Now Available In Local Languages of Almost 1B More people. *Read Write Web*. http://www.readwriteweb.com/archives/hello_india_facebook_now_available_local_languages.php (Accessed 18 July 2010).

Mathison, S. 2003. Digital dividends for the poor. ICT for poverty reduction in Asia", global knowledge partnership, Accessed 12 August, 2006, http://www.globalknowledge.org/gkps_portal/index.cfm?menuid=269&parentid=179 (Accessed 23 July 2009).

Media Development Indicators (MDI). 2008. *Media Development Indicators: A framework for Assessing Media Development IPDC*. Paris: UNESCO.

Mytton, G. 1999. *Handbook of Radio and Television audience research*. Paris: UNICEF.

Nath, V. 2001. Empowerment and governance through information and communication technologies: Women's perspective. *International Information and Library Review*, 33, 317-339.

Olaya, D. 2007. *Compendium of Practices on the Implementation of ICT Questions in Households and Businesses Surveys in Latin America and the Caribbean*. UNECLAC.

Onosaka, A. 2002 "Women's Activism on the Net" in Nanette Gottlieb & Mark McClelland (Eds). *Japanese Cybercultures*. London: Routledge.

Orkello, D. 2007. Empowering Women Through ICT: Enhancing Access to Information by Rural Women <http://www.egovmonitor.com/node/14541> (Accessed 7 July 2009).

OECD. 2007. *Guide to Measuring the Information Society*, Paris: OECD. <http://www.oecd.org/sti/measuring-infoeconomy/guide>. (Accessed 15 June 2009).

Parthajit, K. 2006. *Alpha female Internet use on the rise in Asia – Survey*. *The Financial Express* Retrieved 5 August 2006 from <http://www.digitalmediaasia.com>. (Accessed 7 July 2009).

Partnership on Measuring ICT for Development. 2004. *Project Document*. <http://measuring-ict.unctad.org>. (Accessed 29 June 2009).

Partnership on Measuring ICT for Development. 2005a. *Core ICT Indicators*. New York/Geneva. <http://measuring-ict.unctad.org>. (Accessed 30 June 2009).

Partnership on Measuring ICT for Development. 2005b. *Measuring ICT: the Global Status of ICT Indicators*. New York/Geneva. <http://measuring-ict.unctad.org>. (Accessed 2 July 2009).

Partnership on Measuring ICT for Development. 2008. *The Global Information Society: a Statistical View*. http://www.unctad.org/en/docs/LCW190_en.pdf. (Accessed 5 July 2009).

Philippines Legislators' Committee on Population and Development Foundation, Inc, and Womenshub (Philippines). 2003. *Gender and ICT in the Philippines: A proposed policy framework*. http://old.apc.org/english/capacity/policy/mmtk_gender_ictpol_philippines.pdf. (Accessed 7 July 2009).

A Report on the Status of the Internet in Iran. 2005. http://www.genderit.org/upload/ad6d215b74e2a8613f0cf5416c9f3865/A_Report_on_Internet_Access_in_Iran_2_.pdf (Accessed 17 July 2009).

Riley, T. B. & Okot-Uma, Rogers, W.O. 2001. *Electronic Governance and Electronic Democracy: Living and Working in the Wired World*. Commonwealth Secretariat.

Sangaran, S. 2007. Improved lives through ICT training ICT is changing women in Malaysia. *New Straits Times*. http://findarticles.com/p/news-articles/new-straits-times/mi_8016/is_20070226/improved-lives-ict-training/ai_n44350484/?tag=rel. (Accessed 6 July 2009).

Sharma, C. 2005. Putting ICTs into the hands of the minority women of an Indian ghetto for their economic empowerment. Retrieved 14 October 2005 from <http://www.datamationindia.com> and <http://www.datamationfoundation.org> (Accessed 8 July 2009).

Song J.H. 2006. *E-government in Developing Countries: Lessons Learned from Republic of Korea*. Bangkok: UNESCO. (Accessed 5 July 2009).

Tunku. 2008. One Service, One Delivery, No Wrong Door - Public Service Mantra For 2008. (Web blog comment). <http://tunkuaisha.blogspot.com/2008/01/one-service-one-delivery-no-wrong-door.html>. (Accessed 17 June 2009).

Ummali, V, & Ferdinand D.C. Paragas. 2004. Philippines. In Karan, K. (ed.). *Cyber Communities in Rural Asia: A Study of Seven Countries*. Singapore: Marshall Cavendish.

UNCTAD. 2009. *Manual for the Production of Statistics on the Information Economy*, rev edn. Geneva: UNCTAD. <http://measuring-ict.unctad.org> (Accessed 13 July 2009).

UNDP. 2004. *Promoting ICT for Human Development in Asia (2004): Realizing the Millennium Development Goals. Regional Human Development Report*. New York: UNDP.

UNESCO. 2009. *National Information Society Policy: A Template*. Developed by the Information For All Programme of UNESCO to assist UNESCO Member States in the Development of National Information Policy and Strategy Frameworks. Paris: UNESCO. http://portal.unesco.org/ci/en/files/29360/12602731983IFAP_Template_en.pdf/IFAP_Template_en.pdf (Accessed 20 June 2009).

UNESCO Institute for Statistics. 2008. *Proposal for Internationally Comparable Core Indicators On ICTs in Education*. Paper prepared for the Global Event on Measuring the Information Society, Geneva, 27-29 May 2008. <http://www.uis.unesco.org/template/pdf/cscl/ICT/bckgrdcore.pdf>. (Accessed 14 July 2009).

UNIDO. 2007. *Home page*. <http://www.unido.org/>. (Accessed 4 July 2009).

UNDP. 2004. *Promoting ICT for Human Development in Asia (2004): Realizing the Millennium Development Goals. Regional Human Development Report*. UNDP. Elsevier Publications

UNDP. 2006. A Guide to Measuring the Impact of Right to Information Programmes. Practical Guide Note. United Nations Development Programme Bureau for Development Policy. Democratic Governance Group. <https://www.comminit.com/en/node/187746>

UNSC. 2007. *Report on the Thirty-Eighth Session (27 February to 2 March 2007)*, E/2007/24 and E/CN.3/2007/30, New York). United Nations Statistical Commission. (E/2007/24 and E/CN.3/2007/30). <http://unstats.un.org/unsd/statcom/doc07/FinalReport-Unedited.pdf>. (Accessed 30 June 2009).

UNSD. 1993. *System of National Accounts*. (United Nations Statistics Division). <http://unstats.un.org/unsd/sna1993/introduction.asp>. (Accessed 16 June 2009).

UNSD. 2002. *International Standard Industrial Classification of all Economic Activities*, rev edn. 3.1. (United Nations Statistics Division). <http://unstats.un.org/unsd/cr/family2.asp?CI=17>. (Accessed 14 June 2009).

UNSD. 2005a. *Household Sample Surveys in Developing and Transition Countries*. (United Nations Statistics Division). http://unstats.un.org/unsd/HHsurveys/pdf/Household_surveys.pdf. (Accessed 17 June 2009).

UNSD. 2005b. *Designing Household Survey Samples: Practical Guidelines*. (United Nations Statistics Division). <http://unstats.un.org/unsd/demographic/sources/surveys/Handbook23June05.pdf>. (Accessed 17 June 2009).

UNSD. 2008a. *Principles and Recommendations for Population and Housing Censuses*, 2nd rev edn. (United Nations Statistics Division). <http://unstats.un.org/unsd/methods.htm>. (Accessed 17 June 2009).

UNSD. 2008b. *Updated System of National Accounts 1993 (1993 SNA): Volume 1: Chapters 1 – 17*. (United Nations Statistics Division). <http://unstats.un.org/unsd/methods.htm>. (Accessed 18 June 2009).

UNSD. 2008c. *Draft International Recommendations for Industrial Statistics*. (United Nations Statistics Division). <http://unstats.un.org/unsd/methods.htm>. (Accessed 7 July 2009).

UNSD. 2008d. *International Standard Industrial Classification of all Economic Activities*, 4th rev edn. (United Nations Statistics Division). <http://unstats.un.org/unsd/cr/registry/isc-4.asp>. (Accessed 9 July 2009).

UNSD. 2008e. *UN Commodity Trade Statistics Database (UN COMTRADE)*. (United Nations Statistics Division). <http://unstats.un.org/unsd/comtrade/>. (Accessed 9 July 2009).

US Commercial Service (n. d.). Information Technology- Philippines. <http://www.buyusa.gov/asianow/pit.html>. (Accessed 18 July 2009).

World Bank. 2006. *Knowledge for Development*. http://info.worldbank.org/etools/kam2/KAM_page3.asp (Accessed 12 July 2009).

World Bank. 2004. *Making ICT Work for People*. http://www.digitaldividend.org/knowledge_bank/knowledge_bank_01_data.htm. (Accessed 19 July 2009).

World Customs Organization. 2002. *Harmonized System 2002*. Brussels: WCO.

World Development Indicators Database (n.d.). International Internet Bandwidth. http://www.nationmaster.com/graph/int_int_int_ban_mbp_percap-international-bandwidth-mbps-per-capita. (Accessed 9 July 2009).

Wattegama, C. 2004. Sri Lanka. In Karan, K. (Ed.). *Cyber communities in rural Asia: A study of seven countries*. Singapore: AMIC/Marshall Cavendish.

WTO: Trade topics/Investments/ <http://www.wto.org/> (Accessed 11 February 2011)

Yamada, H. 2010. Current Status of E-Government in Japan and its Future Direction — Electronic Application Services. *Quarterly Review*. 36.

Further reading

http://globaltechforum.eiu.com/index.asp?layout=rich_story&doc_id=11157&title=South+Korea%3A+Overview+of+e-commerce&channelid=4&categoryid=30 (Accessed 7 July 2009).

http://www.ifla.org/files/information-literacy/publications/towards-information-literacy_2008-en.pdf (Accessed 7 July 2009).

<http://ala.org/ala/mgrps/divs/acrl/issues/infolit/standards/standardstoolkit.cfm> (Accessed 7 July 2009).

http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VCJ-4M81C00-1&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&_docanchor=&view=c&_searchStrId=1058159912&_rerunOrigin=google&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=68b6c8e6fc0f54e953c580e2a4356a39 (Accessed 7 July 2009).

http://www.crepunq.qc.ca/Colloques/bibliotheque/scb_anniversaire/hannelore_rader.pdf (Accessed 7 July 2009).

<http://www.unescobkk.org/education/ict/themes/measuring-and-monitoring-change/indicators-database-asia-pacific-regional-survey/manual-for-pilot-testing-the-use-of-indicators-to-assess-impact-of-ict-use-in-education/section-two-pilot-testing-performance-indicators-on-ict-for-education-in-asia-pacific-region> (Accessed 7 July 2009).

http://unfccc.int/cooperation_and_support/capacity_building/items/1033.php (Accessed 7 July 2009).

http://www.kantei.go.jp/foreign/it/network/0122full_e.html. (Accessed 14 July 2009).

<http://www.gip.jipdec.jp/policy/infopoli/indivipoli-e.html#demand> (Accessed 7 July 2009).

<http://www.aseansec.org/13757.htm> (Accessed 9 July 2009).

http://www.weserv.com/index.php?option=com_content&view=article&id=32&Itemid=44 (Accessed 9 July 2009).

<http://www.guidemesingapore.com/job-search/singapore-job-opportunities-foreigners.htm>. (Accessed 9 July 2009).

<http://www.cenlib.iitm.ac.in/docs/library/index.php?page=infolit> (Accessed 9 July 2009).

<http://www.indg.in/primary-education/policiesandschemes/information-and-communication-technology-in-schools-ict-schools> (Accessed 19 July 2009).

<http://cms.unescobkk.org/index.php?id=1849-> (Accessed 9 July 2009).

Websites for Information from Asian Countries.

Afghanistan

http://www.digital-review.org/05_Afghanistan.htm (Accessed 11 July 2009).

<http://www.moc.gov.af/Documents/Policies%20and%20Laws-MoC/Telecommunication%20policy-English.pdf> (Accessed 11 July 2009).

<http://www.mcit.gov.af/Documents/Strategy/MCIT%20ICT%20strategy%20ANDS%202007-10-01-Second%20%20Draft.pdf> (Accessed 11 July 2009).

http://www.digital-review.org/05_Afghanistan.htm (Accessed 11 July 2009).

<http://www.moc.gov.af/Documents/Policies%20and%20Laws-MoC/Telecommunication%20policy-English.pdf> (Accessed 11 July 2009).

<http://www.youthxchange.net/main/afghanistandigitaldivide.asp> (Accessed 11 July 2009).

<http://www.mcit.gov.af/PoliciesandLaws/policiesandlaws.asp> (Accessed 14 July 2009).

<http://www.youthxchange.net/main/afghanistandigitaldivide.asp>. (Accessed 11 July 2009).

<http://www.learningpartnership.org/partners/afghanistan> (Accessed 11 July 2009).

<http://www.mcit.gov.af/Documents/PoliciesandLaws/Afghanistan%20ICT%20Policy-english.pdf>. (Accessed 16 July 2009).

Bangladesh

<http://www.i-policy.org/2009/03/bangladesh-national-ict-policy-2008.html> (Accessed 13 July 2009).

<http://www.aptsec.org/meetings/2005/PRF05/docs/PRF-05-ID-05-Bangladesh%20Telecoms%20Reg..doc> (Accessed 13 July 2009).

<http://www.biid.org.bd/index.php?detail=service> (Accessed 13 July 2009).

http://www.btrc.gov.bd/policy/ICT_Policy_2002.pdf (Accessed 19 July 2009).

<http://www.iipa.com/rbc/2003/2003SPEC301BANGLADESH.pdf>. (Accessed 13 July 2009).

http://www.btrc.gov.bd/policy/Telecom_Policy_1998.pdf. (Accessed 15 July 2009).

http://www.btrc.gov.bd/tariffs/interim_directive_on_tariff_and_marketing_promotion.pdf. (Accessed 13 July 2009).

http://www.mosict.gov.bd/index.php?option=com_docman&task=doc_download&gid=310&Itemid=390 (Accessed 13 July 2009).

Bhutan

<http://www.moic.gov.bt/bips.php> (Accessed 15 July 2009).

http://www.dit.gov.bt/guidelines/Policy_&_Institutional_Plan.pdf (Accessed 13 July 2009).

<http://www.dit.gov.bt/guidelines/BIPS%20Final%20Report%20-%20v5.1.pdf> (Accessed 13 July 2009).

http://www.idrc.ca/panasia/ev-127117-201-1-DO_TOPIC.html (Accessed 18 July 2009).

<http://www.missionthimphu.um.dk/en/menu/DevelopmentAid/OtherProgrammes/PublicPr> (Accessed 13 July 2009).

<http://www.dit.gov.bt/guidelines/bips%20%final%20report%20-%20v5.1.pdf> (Accessed 13 July 2009).

<http://www.dit.gov.bt/guidelines/BIPS%20Final%20Report%20-%20v5.1.pdf> (Accessed 13 July 2009).

<http://www.itu.int/wsis/stocktaking/scripts/documents.asp?project=1204884624>. (Accessed 13 July 2009).

http://www.idrc.ca/panasia/ev-127117-201-1-DO_TOPIC.html. (Accessed 15 July 2009).

http://www.itu.int/ITU-D/tech/RuralTelecom/UPU_Bhutan.pdf. (Accessed 13 July 2009).

<http://www.dit.gov.bt/guidelines/BIPS%20Final%20Report%20-%20v5.1.pdf>. (Accessed 13 July 2009).

<http://www.dit.gov.bt/legislations/bicmact.pdf>. (Accessed 13 July 2009).

Brunei Darussalam

<http://www.brudirect.com/DailyInfo/News/Archive/Sept05/080905/nite05.htm>. (Accessed 17 July 2009).

<http://www.apdip.net/projects/2003/asian-forum/docs/country/bn.pdf>. (Accessed 17 July 2009).

<http://www.ca-ict.org/en/ShowArticle.asp?ArticleID=86>. (Accessed 19 July 2009).

<http://news.brunei.fm/2009/06/06/e-government-strategic-plan-2009-2014> (Accessed 17 July 2009).

<http://www.apdip.net/projects/2003/asian-forum/docs/country/bn.pdf>. (Accessed 17 July 2009).

[http://portal.unesco.org/culture/en/file_download.php/c85dcc0a40bd6639ab43635c3f2f8799EMERGENCY_\(COPYRIGHT\)_ORDER_1999.pdf](http://portal.unesco.org/culture/en/file_download.php/c85dcc0a40bd6639ab43635c3f2f8799EMERGENCY_(COPYRIGHT)_ORDER_1999.pdf). (Accessed 17 July 2009).

http://www.jpm.gov.bn:81/images/download/e_government_strategic_plan_2009_2014_vertical.pdf. (Accessed 17 July 2009).

<http://www.pressreference.com/Be-Co/Brunei-Darussalam.html>. (Accessed 18 July 2009).

Cambodia

<http://www.unescobkk.org/index.php?id=1372>. (Accessed 18 July 2009).

<http://www.nida.gov.kh/> (Accessed 17 July 2009).

http://www.nida.gov.kh/activities/ict_policy. (Accessed 17 July 2009).

<http://www.unapcict.org/ecohub/resources/cambodias-national-ict-policy-draft>. (Accessed 17 July 2009).

<http://www.regulateonline.org/content/view/598/79/> (Accessed 17 July 2009).

http://www.nida.gov.kh/activities/ict_policy/ (Accessed 17 July 2009).

<http://www.unapcict.org/ecohub/resources/cambodias-national-ict-policy-draft> (Accessed 17 July 2009).

http://www.brookings.edu/~media/Files/rc/reports/2008/0817_egovernment_west/0817_egovernment_west.pdf. (Accessed 17 July 2009).

China

http://www.korea.go.kr/eng/_eng_inter/04.doc. (Accessed 19 July 2009).

http://english.people.com.cn/200211/26/eng20021126_107459.shtml. (Accessed 19 July 2009).

http://www.trp.hku.hk/publications/e_gov_china.pdf. (Accessed July 19, 2009). "Every Village has a Phone" and "Gold Farm Engineering" project.

<http://zoushoku.narc.affrc.go.jp/ADR/AFITA/afita/afita-conf/2002/part7/p533.pdf>. (Accessed 19 July 2009).

<http://www.cnii.com.cn/20020808/ca91368.htm>. (Accessed 22 July 2009).

India

<http://www.mit.gov.in> (Accessed 20 July 2009).

<http://www.dotindia.com/nhp/broadbandpolicy2004.htm>. (Accessed 20 July 2009).

http://www.nasscom.in/upload/38370/action_plan_3.pdf. (Accessed 20 July 2009).

<http://www.ictregulationtoolkit.org/en/PracticeNote.3157.html>. (Accessed 20 July 2009).

<http://righttoinformation.gov.in>. (Accessed 20 July 2009).

http://www.domain-b.com/infotech/itnews/20090221_web_traffic_india_grows.html. (Accessed 20 July 2009).

Indonesia

<http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan002101.pdf>. (Accessed 22 July 2009).

<http://www.aseansec.org/13757.htm>. (Accessed 20 July 2009).

<http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN017960.pdf>. (Accessed 20 July 2009).

<http://www.apdip.net/projects/2003/asian-forum/docs/country/id.pdf>. (Accessed 20 July 2009).

http://knol.google.com/k/yulius-haflan-hafil/information-dissemination-development_/34bdngroyorjo/2# (Accessed 20 July 2009).

<http://www.engagingcommunities2005.org/abstracts/Ashrafologhalaei-Ahmadreza-final.pdf>. (Accessed 20 July 2009).

http://www.unescap.org/tid/mtg/ituwtoesc_indo.pdf. (Accessed 20 July 2009).

http://www.indonesia.go.id/en/index.php?option=com_content&task=view&id=294&Itemid=1760. (Accessed 20 July 2009).

http://ses.library.usyd.edu.au/bitstream/2123/2358/1/CopyrightAsiaPacific_Ch12.pdf. (Accessed 20 July 2009).

Iran, Islamic Republic of

http://www.ifla.org/IV/ifla70/papers/084e-Kousha_Abdoli.pdf. (Accessed 22 July 2009).

http://archive.ifla.org/IV/ifla70/papers/084e-Kousha_Abdoli.pdf. (Accessed 22 July 2009).

http://irantelecom.ir/pdfs/4_dev_p/8-21.PDF. (Accessed 22 July 2009).

[http://iran.ahk.de/index.php?id=50&L=0&tx_ttnews\[tt_news\]=1189&cHash=bfb1fffd5](http://iran.ahk.de/index.php?id=50&L=0&tx_ttnews[tt_news]=1189&cHash=bfb1fffd5). (Accessed 22 July 2009).

<http://www.itu.int/newsarchive/wtdc2002/iran.html>. (Accessed 29 July 2009).

[http://iran.ahk.de/index.php?id=50&L=0&tx_ttnews\[tt_news\]=1189&cHash=bfb1fffd5](http://iran.ahk.de/index.php?id=50&L=0&tx_ttnews[tt_news]=1189&cHash=bfb1fffd5). (Accessed 22 July 2009).

<http://www.engagingcommunities2005.org/abstracts/Ashrafologhalaee-Ahmadreza-final.pdf>. (Accessed 22 July 2009).

http://irantelecom.ir/pdfs/4_dev_p/8-21.PDF. (Accessed 22 July 2009).

<http://www.itrc.ac.ir/en.php>. (Accessed 22 July 2009).

Japan

U-Japan Policy Package:

http://www.soumu.go.jp/menu_seisaku/ict/u-japan_en/new_plcy_pckg.html. (Accessed 23 July 2009).

http://www.kantei.go.jp/foreign/it/it_basicl原因/it_basicl原因.html. (Accessed 29 July 2009).

http://www.soumu.go.jp/main_sosiki/joho_tsusin/eng/Releases/Telecommunications/news060908_1.html. (Accessed 23 July 2009).

e-Japan: <http://www.kantei.go.jp/foreign/policy/it/040615summary/04061gaiyo-e.pdf>. (Accessed 23 July 2009).

[http://www.nesdb.go.th/research/Chiba/Ohashi/0706%20%EBC%B3%EBC%A9%EBC%A1%EBC%B0%20text%20\(1\).ppt#297,37](http://www.nesdb.go.th/research/Chiba/Ohashi/0706%20%EBC%B3%EBC%A9%EBC%A1%EBC%B0%20text%20(1).ppt#297,37). (Accessed 23 July 2009).

http://www.kantei.go.jp/foreign/it/network/0122full_e.html. (Accessed 23 July 2009).

http://www.itu.int/osg/spu/ni/ubiquitous/Presentations/5_imagawa_japan.pdf. (Accessed 23 July 2009).

http://www.soumu.go.jp/menu_seisaku/ict/u-japan_en/new_pckg02_menu.html. (Accessed 24 July 2009).

<http://www.dosite.go.jp/e/pj/itstr-j.html>. (Accessed 23 July 2009).

<http://search.japantimes.co.jp/cgi-bin/nc20080116a1.html>. (Accessed 2 July 2009).

Kazakhstan

<http://www.bisnis.doc.gov/bisnis/bisdoc/030915KZTele.htm>. (Accessed 24 July 2009).

http://www.itu.int/ITU-D/ict/mexico04/doc/doc/25_kaz_e.pdf. (Accessed 24 July 2009).

<http://www.e.gov.kz/wps/portal/aboutPortal?lang=en>. (Accessed 24 July 2009).

The web portal of Kazakhstan e-Government project.

<http://www.i4donline.net/news/news-details.asp?catid=6&newsid=6964>. (Accessed 24 July 2009).

<http://www.kablenet.com/kd.nsf/Frontpage/CDBFD21F744656C280256E6E005B12BE?OpenDocument>. (Accessed 24 July 2009).

http://www.mcguirewoods.com/news-resources/publications/international/Regulation_Telecommunication_Kazakhstan.pdf. (Accessed 24 July 2009).

http://www.itu.int/ITU-D/ict/mexico04/doc/doc/25_kaz_e.pdf. (Accessed 24 August 2009).

http://www.mcguirewoods.kz/.../Regulation_Telecommunication_Kazakhstan.pdf. (Accessed 24 July 2009).

<http://www.bharatbook.com/Market-Research-Reports/Kazakhstan-Telecoms-Mobile-Broadband-Forecasts.html>. (Accessed 24 July 2009).

<http://opennet.net/research/profiles/kazakhstan>. (Accessed 24 July 2009).

Democratic People's Republic of Korea

http://www.idrc.ca/fr/ev-127149-201-1-DO_TOPIC.html. (Accessed 25 July 2009).

http://www.digital-review.org/uploads/files/pdf/2007-2008/2007_C21_kp_North_Korea_244_250.pdf?93d8e68695e76f3bf28837adbeb3725c=1db91932a406adc1596af991ae59dd35. (Accessed 25 July 2009).

<http://www.apcss.org/Publications/Edited%20Volumes/BytesAndBullets/CH5.pdf>. (Accessed 25 July 2009).

http://www.idrc.ca/panasia/ev-127149-201-1-DO_TOPIC.html. (Accessed 25 July 2009).

<http://www.icms.he.kp> http://www.idrc.ca/panasia/ev-127149-201-1-DO_TOPIC.html. (Accessed 25 July 2009).

http://www.idrc.ca/fr/ev-127149-201-1-DO_TOPIC.html. (Accessed 25 July 2009).

http://www.ibls.com/internet_law_news_portal_view.aspx?s=latestnews&id=1900. (Accessed 25 July 2009).

http://www.idrc.ca/fr/ev-127149-201-1-DO_TOPIC.html. (Accessed 25 July 2009).

<http://www.apcss.org/Publications/Edited%20Volumes/BytesAndBullets/CH5.pdf>. (Accessed 25 July 2009).

Republic of Korea

<http://www.itif.org/files/2008BBAAppendixF.pdf>. (Accessed 26 July 2009).

<http://www.mic.go.kr/index.jsp>. (Accessed 26 July 2009).

<http://www2.unescobkk.org/education/ict/v2/info.asp?id=15898>. (Accessed 26 July 2009).

http://www.digital-review.org/05_Korea.htm. (Accessed 26 July 2009).

http://goliath.ecnext.com/coms2/gi_0199-3152273/SOUTH-KOREA-THAILAND-SIGN-IT.html. (Accessed 26 July 2009).

<http://www.itif.org/files/2008BBAAppendixF.pdf>. (Accessed 26 July 2009).

http://globaltechforum.eiu.com/index.asp?layout=rich_story&doc_id=11157&title=South+Korea%3A+Overview+of+e-commerce&channelid=4&categoryid=30. (Accessed 26 July 2009).

http://www.kdcstaffs.com/it/main_view.php?mode=view&nNum=1056&page=1&parts=IT
<http://www.apdip.net/publications/ict4d/ict4dparliament.pdf>. (Accessed 26 July 2009).

Kyrgyzstan

<http://eng.gateway.kg/cdf>. (Accessed 27 July 2009).
http://www.cacaari.org/filesarchive/kyrgyzstan_csr.pdf. (Accessed 27 July 2009).
<http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN016400.pdf>. (Accessed 27 July 2009).
<http://eng.gateway.kg/communications>. (Accessed 12 July 2009).
<http://opennet.net/research/profiles/kyrgyzstan>. (Accessed 27 July 2009).
<http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN016400.pdf>. (Accessed 27 July 2009).
www.dtm.gov.tr/.../2nci_gun_Eegitim_Ulan_Brimkulov.doc. (Accessed 27 July 2009).
Law on Informatisation. http://eng.gateway.kg/era_policy. (Accessed 27 July 2009).

Lao PDR

http://www.idrc.ca/panasia/ev-127132-201-1-DO_TOPIC.html. (Accessed 28 July 2009).
<http://www.apdip.net/projects/2003/asian-forum/docs/country/la.pdf>. (Accessed 28 July 2009).
<http://www.mofa.gov.vn/en/nr040807104143/nr040807105039/ns081007090650>, (Accessed 28 July 2009).
<http://www.i-policy.org/2008/10/laos-gets-its-first-3g-service.html>. (Accessed 28 July 2009).
<http://www.bis.org/publ/bppdf/bispap31o.pdf>. (Accessed 28 July 2009).
<http://www.tadlo.net/en/icts-in-laos.html>. (Accessed 28 July 2009).
<http://www.i-policy.org/2008/10/laos-gets-its-first-3g-service.html>. (Accessed 28 July 2009).
<http://cms.unescobkk.org/index.php?id=1384>. (Accessed 28 July 2009).
<http://www.tadlo.net/en/icts-in-laos.html>. (Accessed 28 July 2009).
<http://www.apdip.net/projects/2003/asian-forum/docs/country/la.pdf>. (Accessed 28 July 2009).
<http://www.apdip.net/projects/2003/asian-forum/docs/country/la.pdf>. (Accessed 28 July 2009).
http://www.ktkm.gov.my/template01.asp?Content_ID=368&Cat_ID=5&CatType_ID=84
<http://star-techcentral.com/tech/story.asp?file=/2007/6/24/technology/20070624130204&sec=technology>. (Accessed 28 July 2009).

Mongolia

<http://www.ict.mn/midas/eng/vision.htm>. (Accessed 29 July 2009).

<http://www.apdip.net/projects/2003/asian-forum/docs/country/mn.pdf>. (Accessed 29 July 2009).

http://satjournal.tcom.ohiou.edu/Issue5/social_mongolia.html. (Accessed 29 July 2009).

http://satjournal.tcom.ohiou.edu/Issue5/social_mongolia.html (Accessed 29 August 2009).

<http://www.ict.mn/midas/english/module.php?do=home#>. (Accessed 29 July 2009).

http://www.unescap.org/TTDW/ppp/reports/Mongolia_30may2007.pdf. (Accessed 29 July 2009).

http://www1.american.edu/initeb/dp6120a/html/it_landscape_of_mongolia_-_s1.html. (Accessed 29 July 2009).

http://www.ict.mn/midas/eng/laws_policies.html. (Accessed 29 July 2009).

<http://www.apdip.net/projects/2003/asian-forum/docs/country/mn.pdf>. (Accessed 29 July 2009).

http://www.idrc.ca/en/ev-9693-201-1-DO_TOPIC.html. (Accessed 3 August 2009).

<http://www.state.gov/g/drl/rls/hrrpt/2006/78783.htm>. (Accessed 29 July 2009).

Myanmar

<http://www.apdip.net/projects/dig-rev/>. (Accessed 30 July 2009).

<http://www.mpt.net.mm/mpt/index.htm>. (Accessed 30 July 2009).

<http://www.asia-elearning.net/content/relatedInfo/report/elearning-trend-2002-myanmar.pdf>. (Accessed 30 July 2009).

<http://www.mpt.net.mm/> (Accessed 30 July 2009)..

<http://www.itu.int/ITU-D/icteye/DisplayCountry.aspx?code=MYA>. (Accessed 30 July 2009).

<http://www.mpt.net.mm/mpt/index.htm>. (Accessed 30 July 2009).

Nepal

<http://www.nta.gov.np/en/> (Accessed 16 June 2009).

http://www.moic.gov.np/policy_longterm_policy_of_info_and_commu_sector_2059.php. (Accessed 16 June 2009).

http://www.moic.gov.np/policy_telecommunication_policy_2060.php. (Accessed 16 June 2009).

http://www.nta.gov.np/telecom_policy_2060.htm. (Accessed 16 June 2009).

http://hlcit.gov.np/content.php?cms_id=22. (Accessed 16 June 2009).

http://hlcit.gov.np/content.php?cms_id=5. (Accessed 16 June 2009).

<http://www.fncci.org/itpolicy.php>. (Accessed 18 June 2009).

<http://www.hlcit.gov.np/nepal.php>. (Accessed 16 June 2009).

<http://www.can.org.np/index.php?linkId=4>. (Accessed 16 June 2009).

Pakistan

http://www.pseb.org.pk/UserFiles/documents/National_IT_Policy.pdf. (Accessed 14 June 2009).

<http://www.e-government.gov.pk/> (Accessed 26 June 2009).

http://www.pseb.org.pk/UserFiles/documents/National_IT_Policy.pdf. (Accessed 14 June 2009).

<http://www.moitt.gov.pk> (Accessed 26 June 2009).

<http://www.e-government.gov.pk/> (Accessed 22 June 2009).

http://202.83.164.28/col.war/e-government-directorate/policy/InternetE.MailsPolicy_Final%20Edition-EGD.p (Accessed 14 June 2009).

<http://cspakistan.org/CSP> (Accessed 27 June 2009).

<http://www.genderit.org/en/index.shtml?w=a&x=95134> (Accessed 24 June 2009).

The Philippines

<http://www.neda.gov.ph> (Accessed 19 June 2009).

http://www.cict.gov.ph/index.php?option=com_content&task=view&id=17&Itemid=94 (Accessed 19 June 2009).

<http://www1.american.edu/initeb/js5518a/Country-analysis-philippines.html>. (Accessed 19 June 2009).

http://www.cict.gov.ph/index.php?option=com_content&task=view&id=17&Itemid=94. (Accessed 29 June 2009).

http://www2.unescobkk.org/education/ict/v2_2/info.asp?id=13244. (Accessed 19 June 2009).

<http://www.gmanews.tv/story/119237/Mobile-phones-key-to-universal-ICT-access---NTC-official>. (Accessed 28 June 2009).

http://www.mgovernment.org/resurces/mgovlab_afgik.pdf. (Accessed 19 June 2009).

<http://mobiletulay.edongskey.com/resources/e-Government%20in%20the%20Philippines.pdf>. (Accessed 27 June 2009).

<http://mobiletulay.edongskey.com/resources/e-Government%20in%20the%20Philippines.pdf>. (Accessed 19 June 2009).

<http://www.dti.gov.ph>. (Accessed 19 June 2009).

http://www.ictgroup.com/images/downloadable_files/Philippines_Fact_Sheet_FINAL.pdf. (Accessed 19 June 2009).

http://www.pcs-it.org/index.php?option=com_content&task=view&id=37&Itemid=1. (Accessed 18 June 2009).

http://www.neda.gov.ph/references/RAs/IRR_RA8792.htm. (Accessed 19 June 2009).

<http://www.chanrobles.com/legal7code.htm>. (Accessed 19 June 2009).

<http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan011269.pdf>. (Accessed 19 June 2009).

Singapore

<http://www.ida.gov.sg/idaweb/marketing/index.jsp>IDA. (Accessed 23 June 2009).

<http://www.ida.gov.sg/idaweb/marketing/index.jsp>. (Accessed 23 June 2009).

<http://www.ida.gov.sg/idaweb/broadband/infopage.jsp?infopagecategory=&infopageid=l880&versionid=7>. (Accessed 23 June 2009).

www.igov.gov.sg/NR/.../2007ReportonSingaporeeGovernment.pdf. (Accessed 23 June 2009).

<http://www.in2015.sg> (Accessed 23 June 2009).

<http://www.ida.gov.sg/idaweb/broadband/infopage.jsp?infopagecategory=&infopageid=l880&versionid=7> (Accessed 23 June 2009).

<http://www.ida.gov.sg/idaweb/pnr/infopage.jsp?infopagecategory=&infopageid=l489&versionid=1>. (Accessed 23 June 2009).

<http://www.ida.gov.sg/idaweb/marketing/infopage.jsp?infopagecategory=factsheet:marketing&versionid=7&infopageid=l776>. (Accessed 23 June 2009).

<http://www.zdnetasia.com/news/communications/0,39044192,62055156,00.htm>. (Accessed 23 June 2009).

<http://www.ida.gov.sg/idaweb/marketing/infopage.jsp?infopagecategory=&infopageid=l3680&versionid=3>. (Accessed 25 June 2009).

http://www.hiit.fi/u/vlehdonv/publications/singapore_data_protection.pdf. (Accessed 23 June 2009).

<http://www.ida.gov.sg/idaweb/media/infopage.jsp?infopagecategory=general.speeches:media&versionid=2&infopageid=l2400>. (Accessed 23 June 2009).

<https://www.ida.gov.sg/insg1/post/iN2015-Masterplan-Offers-a-Digital-Future-for-Everyone.aspx>. (Accessed 23 June 2009).

Sri Lanka

<http://www.cominit.com/en/node/148355>. (Accessed 25 June 2009).

<http://www.icta.lk> (Accessed 25 June 2009).

www.adb.org/Documents/Reports/ICT-Education.../chap3.pdf (Accessed 25 June 2009).

<http://www.ict4rl.info/CaseStudies/ESriLankaEvaluation> (Accessed 25 June 2009).

<http://www.asocio.org/member/FITIS/FITIS-SL%20-%20ICT%20Industry.pdf>

http://www1.american.edu/MOGIT/nm9903a/sl_tele.html (Accessed 25 June 2009).

telecommunications development package. (Accessed 25 June 2009).

http://www1.american.edu/MOGIT/nm9903a/sl_tele.html. (Accessed 20 July 2009).

<http://www.asocio.org/member/FITIS/FITIS-SL%20-%20ICT%20Industry.pdf>. (Accessed 25 June 2009).

<http://siteresources.worldbank.org/SOUTHASIAEXT/Resources/223546-1206318727118/4808502-1206318753312/slknowledgechapter3.pdf> (Accessed 29 June 2009).

<http://www.icta.lk/insidepages/e-srilanka/e-srilanka.asp>. (Accessed 25 June 2009).

<http://www.sarvodaya.org/wp-content/TelecentersSriLanka-KamalKapadia.pdf>. (Accessed 25 June 2009).

<http://www.itlanka.lk> (Accessed 25 June 2009).

<http://www.privacyinternational.org/article.shtml?cmd%5B347%5D=x-347-559488>. (Accessed 25 June 2009).

http://www.unescap.org/tid/publication/part_three2261_sl.pdf. (Accessed 29 June 2009).

<http://www.itu.int/wsis/tunis/statements/docs/g-srilanka/1.html>. (Accessed 25 June 2009).

<http://www.privacyinternational.org/article.shtml?cmd%5B347%5D=x-347-559488>. (Accessed 25 June 2009).

<http://www.sarvodaya.org/wp-content/TelecentersSriLanka-KamalKapadia.pdf>. (Accessed 25 July 2009).

<http://www.adb.org/Documents/Reports/Validation/SRI/in258-08.pdf>. (Accessed 28 June 2009).

<http://www.apdip.net/resources/case/rnd11/view> (Accessed 14 July 2009).

Tajikistan

<http://www.gipi.kg/en/node/135> (Accessed 28 June 2009).

<http://www.totel.com.au/tajikistan-telecommunications-research.asp?cid=TJ&toc=1106>. (Accessed 28 June 2009).

<http://www.intgovforum.org/BPP2.php?went=3>. (Accessed 28 June 2009).

<http://www.totel.com.au/tajikistan-telecommunications>. (Accessed 28 June 2009).

<http://www.totel.com.au/tajikistan-telecommunications-research.asp?cid=TJ&toc=1106>. (Accessed 28 June 2009).

<http://www.gipi.am/?i=244>. (Accessed 28 June 2009).

<http://opennet.net/research/profiles/tajikistan>. (Accessed 28 July 2009).

http://www-wds.worldbank.org/servlet/main?menuPK=64187510&pagePK=64193027&piPK=64187937&heSitePK=523679&entityID=000350881_20090429104241. (Accessed 28 June 2009).

http://www.unpan.org/information/RCOCI%20GovernanceWatch/RCOCI-CityInformatizationBulletin/Asia-Pacific%20Series%20IV-2003/APSI_4.htm#1eca010. (Accessed 28 June 2009).

<http://web.undp.sk/files/bookstore/89/tajikistan.pdf>. (Accessed 28 June 2009).

<http://www.intgovforum.org/BPP2.php?went=3>. (Accessed 2 July 2009).

<http://www.alpinefund.org/garth/ict-taj.htm>. (Accessed 28 June 2009).

Thailand

<http://www.nectec.or.th/users/htk/publish/20020302-National-ICT-Policy-v16-word.pdf>. (Accessed 4 July 2009).

http://egov.thaigov.net/english/Doc_eng/pdf/National%20Polcy%20Plan%20on%20ICT.pdf. (Accessed 5 July 2009).

<http://www.apdip.net/projects/2003/asian-forum/docs/country/th.pdf>. (Accessed 29 June 2009).

http://www.unescap.org/tid/publication/t&ipub2336_part2v.pdf. (Accessed 6 July 2009).

http://www.ebusinessforum.com/index.asp?layout=rich_story&doc_id=9936&title=Thailand%3A+Overview+of+e-commerce&channelid=4&categoryid=30. (Accessed 29 June 2009).

<http://www.apdip.net/projects/2003/asian-forum/docs/country/th.pdf>. (Accessed 29 June 2009).

<http://www.nectec.or.th/users/htk/publish/20020302-National-ICT-Policy-v16-word.pdf>. (Accessed 29 June 2009).

<http://www.prachatai.com/english/node/1179>. (Accessed 18 July 2009).

Turkmenistan

<http://europeandcis.undp.org/governance/show/67FC90F4-F203-1EE9-B0DE02CEBE5337A1>. (Accessed 20 July 2009).

http://www.cacaari.org/filesarchive/turkmenistan_csr.pdf (Accessed 8 July 2009).

http://www.photius.com/countries/turkmenistan/economy/turkmenistan_economy_telecommunications.html. (Accessed 20 July 2009).

http://www.turkmenistaninfo.ru/?page_id=6&type=article&elem_id=page_6/magazine_31/239&lang_id=en (Accessed 2 July 2009).

<http://www.eurasianet.org/departments/news/articles/eav031309.shtml>. (Accessed 20 June 2009).

http://www.cacaari.org/filesarchive/turkmenistan_csr.pdf. (Accessed 20 June 2009).

http://news.bbc.co.uk/2/hi/asia-pacific/country_profiles/1298497.stm#facts (Accessed 18 July 2009).

http://www.brookings.edu/~media/Files/rc/reports/2008/0817_egovernment_west/0817_egovernment_west.pdf. (Accessed 20 July 2009).

<http://www.state.gov/e/eeb/rls/othr/ics/2009/117177.htm>. (Accessed 20 June 2009).

http://news.bbc.co.uk/2/hi/asia-pacific/country_profiles/1298497.stm#media. (Accessed 20 July 2009).

<http://www.eurasianet.org/departments/news/articles/eav031309.shtml>. (Accessed 2 July 2009).

Uzbekistan

<http://en.ictp.uz/content/view/11/14> (Accessed 26 June 2009).

<http://www.ictcouncil.gov.uz/main.php?chlang=2> (Accessed 26 June 2009).

http://www.aci.uz/en/news/mass_media_about_ict/article/860/. (Accessed 26 June 2009).

<http://www.uzinfocom.uz/spravochnik> (Accessed 26 June 2009).

<http://www.ictp.uz/en/news/350>. (Accessed 26 June 2009).

http://www.brookings.edu/~media/Files/rc/reports/2008/0817_egovernment_west/0817_egovernment_west.pdf. (Accessed 26 June 2009).

<http://en.ictp.uz/content/blogsection/3/14/>. (Accessed 26 June 2009).

<http://www.iipa.com/rbc/2007/2007SPEC301UZBEKISTAN.pdf> (Accessed 26 June 2009).

<http://en.ictp.uz/content/blogsection/5/19/>. (Accessed 26 August 2009).

<http://www.unesco.org/education/uie/pdf/country/Uzbekistan1.pdf>. (Accessed 26 July 2009).

Viet Nam

<http://www.lookatvietnam.com/2009/02/new-telco-page-is-turned-over.html>. (Accessed 29 June 2009).

<http://english.vietnamnet.vn/education/2008/08/798627/> (Accessed 3 July 2009).

http://www.iipi.org/Conferences/Hawaii_SW_Conference/Nguyen%20Paper.pdf (Accessed 5 September 2009).

<http://www.icit.org> (Accessed 5 June 2009).

http://www.digital-review.org/05_Vietnam.htm (Accessed 5 July 2009).

<http://telecomit.net/index.php?ns=News&dialoose=View&id=195&cat=6&name=telecom-infrastructure-to-be-opened-to-private-sector>. (Accessed 9 July 2009).

<http://opennet.net/research/profiles/vietnam>. (Accessed 3 July 2009).

http://www.commercialdiplomacy.org/ma_projects/tra2.htm. (Accessed 5 July 2009).

http://news.bbc.co.uk/2/hi/asia-pacific/country_profiles/1243338.stm#media. (Accessed 9 July 2009).

<http://telecomit.net/index.php?ns=News&dialoose=View&id=195&cat=6&name=telecom-infrastructure-to-be-opened-to-private-sector>. (Accessed 5 July 2009).

<http://www.jtec.or.jp/e-report06.html>. (Accessed 5 July 2009).

<http://www.vietnam-ustrade.org/index.php?f=news&do=detail&id=34&lang=english>. (Accessed 5 July 2009).

http://www.internews.org/prs/2008/20081118_vietnam.shtm. (Accessed 8 July 2009).

<http://www.state.gov/g/drl/rls/hrrpt/2008/eap/119063.htm>. (Accessed 9 July 2009).

http://www.saigon-gpdaily.com.vn/Science_Technology/2009/2/68321/ (Accessed 15 July 2009).

http://portal.unesco.org/ci/en/ev.php-URL_ID=20776&URL_DO=DO_TOPIC&URL_SECTION=201.html. (Accessed 5 July 2009).

[for Part II]

Internet Sources

Australian Bureau of Statistics. (2005). *Use of information technology by households in Queensland*. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/ProductsbyCatalogue/710089C144B65B51CA2570C80074498D?OpenDocument>

Infocomm Development Authority of Singapore. (2009). Annual survey on infocomm usage in households and by individuals for 2009. Retrieved from http://www.ida.gov.sg/doc/Publications/Publications_Level3/Survey2009/HH2009ES.pdf

KCC & KISA. (2009). *Survey on the Internet usage*. Retrieved from <http://isis.nic.or.kr/eng/board/index.jsp?pageId=040100&bbsId=10&itemId=310&pageIndex=1>

KCC & KISA. (2009). *Survey on the SNS usage*. Retrieved from <http://isis.nic.or.kr/eng/board/index.jsp?pageId=040100&bbsId=10&itemId=309&pageIndex=2>

Ofcom. (2010). *Adults' media literacy in the nations: Summary report*. Retrieved from <http://stakeholders.ofcom.org.uk/market-data-research/media-literacy/medlitpub/medlitpubrss/adultmedialitreport/>

Statistics Canada. (2001). Changing our ways: Why and how Canadians use the Internet. Retrieved from [http://www.statcan.gc.ca/cgi-bin/af-fdr.cgi?l=eng&loc=http://www.statcan.gc.ca/pub/56f0006x/56f0006x2000001-eng.pdf&t=Changing Our Ways: Why and How Canadians Use the Internet](http://www.statcan.gc.ca/cgi-bin/af-fdr.cgi?l=eng&loc=http://www.statcan.gc.ca/pub/56f0006x/56f0006x2000001-eng.pdf&t=Changing%20Our%20Ways%3A%20Why%20and%20How%20Canadians%20Use%20the%20Internet)

References

Ahn, M.L., & Kim, M.H. (2003). Development of digital Literacy checklist. *Journal of Educational Information and Media*, 9(1), 159-193.

Catts, R., Lau, J., and Ellis. (2008). *Towards information literacy indicators*. Paris: UNESCO.

Educational Testing Service. (2002). *Digital transformation : A framework for ICT literacy*. Retrieved from <http://www.ets.org/research/ictliteracy>

Eisenberg, M. (2008). Information literacy: Essential skills for the information age. *Journal of Library and Information Technology*, 28(2), 39-47.

Ellis, S., Heaney, M., Meunier, P., and Poll, R. (2009). 'Global Library Statistics' *IFLA J* 35.2, pp. 123-130. Heaney, M. ed., (2009). *Library Statistics for the Twenty-First Century World*, IFLA.

OECD & Human Resources Development Canada. (1997). *Literacy skills for the knowledge society: Further results from the international adult literacy survey*. Paris: OECD & HRDC.

OECD & STATCAN. (1995). *Literacy, economy and society : Results of the first international adult survey*. Paris and Ottawa: OECD & STATCAN.

OECD & STATCAN. (2000). *Literacy in the information age: Final report of the international adult literacy survey*. Paris and Ottawa: OECD & STATCAN.

UNESCO (2005). *EFA Global monitoring report 2006. Education for All : Literacy for life*. Paris: UNESCO.

UNESCO (2008). *Using a literacy module in household surveys: A guide book*. Bangkok: UNESCO.

UNESCO (2008B). *Media Development Indicators*. Paris: UNESCO

WSIS (2003) *Action Plan*, UNESCO ITU, Geneva.



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