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Comparative Analysis  
of  
ICT Policies and e-Strategies in Asia

by

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# Comparative Analysis of ICT Policies and e-Strategies in Asia

## DRAFT

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Nine Asian countries are included in this study: India, Japan, Republic of Korea, Malaysia, Nepal, Philippines, Singapore, Sri Lanka and Vietnam.

At the outset it was decided that three Asian countries from each of the World Bank's categories of high income, middle income and low income countries in Asia would be selected.<sup>1</sup> It was also decided that as much as possible, East Asia, South East Asia and South Asia would be evenly represented in the study. The availability of primary documents online (in English or English translation) was the third criterion used in selecting the nine countries for this study.

As to be expected, the high income countries in the study—Japan, Korea and Singapore--have high fixed line, mobile line and internet penetration (see Table 1 below). Of the three, Singapore has highest telecommunications (fixed line penetration and mobile) penetration--due in some degree to the ease of wiring a small highly concentrated population. Korea has the highest internet penetration and a world leader in broadband deployment and use. Japan is the global leader in mobile internet with its NTT DoCoMo service and is a leader in the production of PC components and peripherals. It is also a leader in computer/video games.

**Table 1**  
**High Income Countries**

	GNI	Per Capita GNI	Fixed Line Penetration	Mobile Penetration	Internet Penetration
Japan	\$4,265 b	\$33,550	40.9%	49.8%	37%
Korea	\$ 473 b	\$ 9,930	51.8%	59%	46%
Singapore	\$ 86 b	\$20,690	48.5%	74.5%	44%

The telephone (fixed and mobile) and internet penetration of the middle income countries in the study—Malaysia, Philippines and Sri Lanka—occupy a tier below the high income countries (see Table 2). Malaysia, a high middle income country, is also known for its MultiMedia Super Corridor (MSC) Initiative. The Philippines is an emerging player in the ICT-enabled services like call centers and Business Process Outsourcing (BPO). Sri Lanka has boldly declared that by 2007 it will be “better known as the e-Sri Lankan

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<sup>1</sup> World Bank defines low income economies as those with per capital GNI of \$735 or less; lower middle income with per capita GNI of \$736 - \$2,935; upper middle income with GNI of \$2,936 - \$9,075; and high income are those with per capita GNI of \$9,076 or more.

Miracle--a model achievement drawing global recognition, in the deployment of ICT towards the achievement of Social and Economic Development.”

**Table 2**  
**Middle Income Countries**

	GNI	Per Capita GNI	Fixed Line Penetration	Mobile Penetration	Internet Penetration
Malaysia	\$86 b	\$3,500	20.2%	23.9%	14%
Philippines	\$81 b	\$1,020	9.15%	11.2%	6%
Sri Lanka*	\$16 b	\$ 840	8.0%	3.6%	0.785

The relationship between GNP and telephone and internet penetration that we see in the high and middle income countries is also evident in relevant statistic of the three low income countries in the study. (see Table 3 below). India is a global player in software development and ICT-enabled services. Vietnam is a transition economy that has identified ICT as an engine of growth. Nepal intends to be in the global IT map by 2005.

**Table 3**  
**Low Income Countries**

	GNI	Per Capita GNI	Fixed Line Penetration	Mobile Penetration	Internet Penetration
India	\$5 01 b	\$480	3.7%	0.45%	1.0%
Nepal*	\$ 5 b	\$230	1.42%	0.09%	0.43%
Vietnam	\$ 35 b	\$430	2.57%	2.23%	0.12%

Sources: Unless otherwise indicated GNI and per Capita GNI data are taken from the *World Development Indicators* 2003 published by the World Bank. Fixed Line, Mobile and Internet Penetration from *Factbook on the Telecom and IT Industry in Asia*, January 2002 except when indicated by \*, in this case data on Fixed Line, Mobile and Internet Penetration from *Digital Review of Asia Pacific*

High income economies also rated high in the Technology Assessment Index. In this study that looks at degree of technological diffusion and use in 72 countries, Japan (ranked 4<sup>th</sup>), Korea (5<sup>th</sup>) and Singapore (10<sup>th</sup>) belong to the ‘Leaders’ or countries at the cutting edge of technological innovation. Malaysia (30<sup>th</sup>) is included among “Potential Leaders”—those who have diffused old technologies widely but innovate little. The Philippines (40<sup>th</sup>), Sri Lanka (62<sup>nd</sup>) and India (63<sup>rd</sup>) belong to the “Dynamic Adopters” or those who have imported hi-tech hub but diffusion of old technologies is still incomplete. Nepal (69<sup>th</sup>) is categorized as ‘Marginalized’—where diffusion of old technologies and skill building has a long way to go. Vietnam is unranked.

The pattern in the relationship between income on the one hand and, telephone and internet penetration or technology use and innovation, on the other is also evident in the Network Readiness Index. The NRI measures the

extent of current network connectivity and the country's capacity to exploit existing networks and create new ones.<sup>2</sup> It ranks countries in terms of their "potential to participate in the Networked World in the Future." The NRI for 2001-2002 ranks Singapore at no. 8, Korea at no. 20 and Japan at 21st. Malaysia (36<sup>th</sup>) India (54<sup>th</sup>) and the Philippines (58<sup>th</sup>) are the next three countries ranked. Sri Lanka is at 62<sup>nd</sup> spot and Vietnam is at 72<sup>nd</sup>. Nepal is not ranked in the NRI.

It is important to point out that while income is related to better telecommunications infrastructure, technology use/innovation and readiness for the networked world (i.e., high income countries are better prepared for the networked world), the reverse is also true. Studies have shown that good telecommunications infrastructure help improve national incomes.<sup>3</sup> While it true that if a country improves its gross national income, it can afford better national information infrastructure. It is also the case that more extensive and intensive use of ICTs would help promote national growth and development.

Thus, countries interested in propelling their countries to growth would be well served to developed ICT master plans that benefit from a study of other countries experiences.

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<sup>2</sup> [http://www.cid.harvard.edu/cr/pdf/gitr2002\\_ch02.pdf](http://www.cid.harvard.edu/cr/pdf/gitr2002_ch02.pdf)

<sup>3</sup> Eduardo Talero "National Information Infrastructure in Developing Economies" in Kahin and Wilson *National Information Infrastructure* p. 294

# I

## Overview of ICT Master Plans

### ***High Income Economies***

All the high income countries in this study have had at least one 'integrated' ICT for development master plan-where telecommunications and IT policies were not developed separately and form part of one development plan. Also noteworthy is that they have laid the foundation for ICT development as early as the 1980s. Singapore's first IT master plan was formulated and implemented between 1980 and 1985. Korea's first national computerization project was initiated in 1987. Japan began discussing its National Information Infrastructure in the early 1990s. These countries also laid the foundation of their ICT development strategy when they implemented government computerization.

### JAPAN

The 'e-Japan Strategy' was announced as a national strategy for IT on January 22, 2001. The vision of e-Japan is a society "where everyone can actively utilize information technology (IT) and fully enjoy its benefits". In achieving this goal, government's role is to "establish an environment where the private sector, based on market forces, can exert its full potential and make Japan the world's most advanced IT nation within five years". The specific goals of eJapan strategy are: 1) building an ultra high-speed Internet network and providing constant Internet access at the earliest date possible, 2) establishing rules on electronic commerce, 3) realizing an electronic government and 4) nurturing high-quality human resources for the new era.

On March 29, 2001, the "e Japan Priority Policy Program" was adopted to realize the "e-Japan Strategy" and clarify all measures the government should rapidly implement with priority by 2006. Roles of the private and public sectors are given in the Program in which the private sector is to play the leading role in the area of IT. The Program also identifies five areas for action:

- Formation of the world's most advanced information and telecommunications networks
- Promotion of education and learning as well as development of human resources
- Facilitation of electronic commerce
- Digitization of the administration and application of IT in other public areas
- Ensuring security and reliability of advanced information and telecommunications networks

e-Japan Strategy II, launched in July 2003, aims to create a "vibrant, safe, impressive and convenient" society with the active use of IT. The new strategy proposes to take leading measures in seven areas that are closely related to the lives of the people: medical treatment, food, life, small-and-medium-sized-enterprises, finance, knowledge, employment, government

service. The strategy also seeks to advance the development of new IT social infrastructures, which is essential for the sophisticated use of IT during this second phase.

The e-Japan Strategy was preceded by the “Basic IT Strategy” (formulated in November 2000), and the “Basic Law on the Formation of an Advanced Information and Telecommunications Network Society” (“IT Basic Law”, enacted January 6, 2001). The IT Basic Law calls for the “Promotion of an Advanced Information and Telecommunications Network Society, and providing stipulations on the development of a priority policy program for the formation of an advanced information and telecommunications network society”. In 1995, Japan launched its “Towards Advanced Information Society”, which was supplemented with a mid-term plan and action plans in 1996 and 1998.

The idea of harnessing IT for development was being bruited about since the early 1980s. As was noted by observers in the late 1990s,

The phrase *jojo-ka*—usually translated by the quasi-English word ‘informatization’ and denoting change to an information-oriented society—has been a slogan of Japanese government policy for more than two decades, even though the actual effect of the slogan has been minimal.<sup>4</sup>

## KOREA

e-Korea Vision 2006 embodies the belief that “the promotion of informatization in all aspects of society will led to an increased effectiveness of all socio-economic activities, higher national performance, and higher quality of life.”

Its objectives are:

1. To maximize the ability of all citizens to utilize information and communication technologies in order to actively participate in the information society
2. To strengthen global competitiveness of the economy by promoting informatization in all industries
3. To realize a smart government structure with high transparency and productivity through informatization efforts
4. To facilitate continued economic growth by promoting the IT industry and advancing the information infrastructure
5. To become a leader in the global information society by taking a major role in international cooperation

e-Korea Vision 2006 also set the following basic directions:

- *From Quantitative Expansion to Qualitative Accomplishments* such

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<sup>4</sup> Joel West, Jason Dedrick and Kenneth L. Kraemer “Back to the Future: Japan’s NII Plans” in Kahin and Wilson (eds) *National Information Infrastructure Initiatives* p. 66

as the increase in productivity through legal and institutional reforms and innovations in business processes throughout society rather than quantitative expansion of the Internet.

- *From Creation of new industries led by the government to Foundation for new industries.* The government's new role is to focus on the enabling environment and the private sector will be developing new independent and creative industries based on the foundation provided by the government.
- *From Catch-up Strategy to Leading Strategy* - the government plans to create an environment in which the creativity of every citizen can be fully utilized in order to produce the best goods and services in the world. To strengthen competitiveness in IT, the government will increase leading investments in core technologies and strategic services which have the potential to produce significant added value in the future.

The Korean government adopted the first Master Plan for Informatization Promotion in June 1996, following the enactment of the Framework Act on Informatization Promotion in August, 1995. In furtherance of the goals of the first informatization plan, the government also established a national organization for planning and implementation. In March, 1999, the government formulated the second informatization master plan called Cyber Korea 21. Cyber Korea 21 provides a blueprint for the new information society of the 21st century in order to overcome the Asian Economic Crisis and to transform the Korean economy into a knowledge-based one.

But the roots of e-Korea run deeper. The National Basic Information System (NBIS), which is a national computerization project, was initiated in 1987.<sup>5</sup> The NBIS initially focused on public sector computerization, with the objective of creating a smaller and more efficient government and laying the foundation for the development of IT industries by stimulating initial markets. This strategy was also expected to raise the private sector's interest in the application of IT to internal business operations, allowing industry to follow the achievement of government. NBIS is the crystallization of the Korean government's realization, in the early 1980s, that IT and its applications would play crucial roles as new national infrastructure.

## SINGAPORE

Singapore is currently implementing its fourth IT strategic plan called "Infocomm 21". This five-year plan, implemented since 2000, identifies six broad strategic thrusts for the island state:

- Singapore as a Premier Infocomm Hub;

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<sup>5</sup> Kuk-Hwan Jeong and John Leslie King "Korea's National Information Infrastructure: Visions and Issues" in Brian Kahin and Ernest Wilson (eds) *National Information Infrastructure Initiatives: Vision and Policy Design* (Cambridge, MA: MIT Press, 1997) pp 112-118

- Singapore Businesses Online;
- Singapore Government Online;
- Singaporeans Online;
- Singapore as Infocomm Talent Capital; and
- Conducive Pro-Business and Pro-Consumer Environment.

In this plan, the government sees its role as catalytic, with the industry taking the lead in the implementation of the strategy, and the government focusing on facilitating international alliances and creating an environment that is conducive for businesses to thrive.

Singapore's first IT Master plan was the National Computerization plan which was implemented between 1980 and 1985. This plan envisioned the computerization of the public service. The National Computer Board, created in 1981, was the main body to promote computerization and IT industry development in a coordinated manner. That the NCB was placed under the Ministry of Finance "gave it the clout needed to plan and implement computerization projects for the entire public sector".<sup>6</sup>

The National Computerization Plan was followed by the National IT Plan (NITP) which was implemented between 1986 and 1991. The NITP is characterized by extending government systems (such as TradeNet and LawNet) to the private sector. It identified seven building blocks for IT development in Singapore: IT Manpower, IT Culture, Information Communication Infrastructure; IT Applications; IT Industry; Climate for Creativity and Entrepreneurship; and Coordination and Collaboration.

The NITP was succeeded by the IT 2000 plan (1992-1999) which envisioned Singapore to be "among the first countries in the world with an advanced nation-wide information infrastructure." This advanced national information infrastructure would be used as foundation for five strategic thrusts: 1) Developing a Global Hub; 2) Boosting the Economic Engine; 3) Enhancing the Potentials of Individuals; 4) Linking Communities Locally and Globally; and, 5) Improving the Quality of Life.

### ***Middle Income Economies***

The countries in the middle income group—Malaysia, Philippines and Sri Lanka also have integrated ICT master plans. In Malaysia, the government plays a more active role in promoting ICT development in the country, while the Philippines take a more market-led approach. Sri Lanka, emerging from the ravages of civil war is looking to use ICT to develop its economy, alleviate poverty, and improve the quality of life and the opportunities for all its citizens.

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<sup>6</sup> Poh-Kam Wong "Implementing the NII Vision: Singapore's Experience and Future Challenges" in Kahin and Wilson (eds) *National Information Infrastructure Initiatives* p. 27

## MALAYSIA

The National IT Agenda (NITA), launched by the NITC in 1996, serves as the main policy statement as regards the development of ICT in Malaysia. As provided for in the Eighth Malaysia Plan (2001), NITA provides “the framework for the orderly development of the country into an information and knowledge-based society by 2020”.

NITA’s theme is “Turning Ripples into Tidal Waves”. The ‘ripples’ are essentially specific initiatives by the government – like the Multimedia Super Corridor - aimed at providing the necessary environment to empower the people who, in turn, are assumed to bring about the ‘tidal wave’ of change.

The NITC, which is the Apex ICT body in Malaysia has formulated an NITC Strategic Agenda with five key areas to enable the country to “migrate to the E-World of the new millennium”. The NITA emphasizes the need to address the following five key strategic thrust areas:

- *E-Community* - to enhance the quality of life of all Malaysian communities through ICT.
- *E-Public Services* - to get the public, private and community sectors to collaborate on an ongoing basis to enable the provision of people-oriented, customer focused services electronically.
- *E-Learning* - to create and develop, through ICT, formal and informal learning networks for communities, with the goal of cultivating an ethos of life-long, continuous learning for individual, organizational and societal advancement.
- *E-Economy* - to oversee the optimal usage of ICT in developing a knowledge economy, making it grow and become globally competitive.
- *E-Sovereignty* - focuses on building a resilient national identity, it is envisioned that citizens and institutions zero in towards enhancing national identity, integrity and societal stability in the face of borderless challenges to the nation.<sup>7</sup>

The Communications and Multimedia Act 1998 also provides the following all-encompassing policy objectives:

- a. To establish Malaysia as a major global center and hub for communications and multimedia information and content services;
- b. To promote civil society where information-based services will provide the basis of continuing enhancements to quality of work and life;
- c. To grow and nurture local information resources and cultural representation that facilitate the national identity and global diversity;
- d. To regulate for the long-term benefit of the end user;

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<sup>7</sup><http://www.nitc.org.my/>

- e. To promote a high level of consumer confidence in service delivery from the industry;
- f. To ensure an equitable provision of affordable services over ubiquitous national infrastructure;
- g. To create a robust applications environment for end users;
- h. To facilitate the efficient allocation of resources such as skilled labour, capital, knowledge and national assets;
- i. To promote the development of capabilities and skills within Malaysia's convergence industries; and
- j. To ensure information security and network reliability and integrity.

## PHILIPPINES

In 1998, the Philippine government launched the National Information Technology Plan for the 21st century dubbed as "IT21" which lays down the vision and strategy to spur the country to global competitiveness through information technology. This ambitious plan specifically sets down the following goals and the respective timeframes for each goal:

- *By 2000*: the Philippines will have laid the infrastructure for every business, every agency of government, every school, and every home in the Philippines to have access to information technology;
- *By 2005*: IT use will be pervasive in daily life. Philippine companies will be producing competitive IT products for world markets; and
- *Within the first 10 years of the 21st Century*: the Philippines will be a Knowledge Center in the Asia-Pacific, i.e., the leader in IT education, in IT-assisted training, and in the application of information and knowledge to business, professional services, and the arts.

In July 2000, a *Government Information Systems Plan (GISP)* was approved and adopted as a framework and guide for all computerization efforts in Government (EO 265). The GISP aims to create a system of governance that will lead to: faster and better delivery of public goods and services; greater transparency in government operations; increased capacities of public sector organizations; and proactive participation of citizens in governance.

In 2003, ITECC defined its vision of the Philippines as "An e-enabled society where empowered citizens have access to technologies that will provide quality education, efficient government service, greater source of livelihood, and a better way of life." Its more specifically goals are: 1) provide government services to stakeholders online; 2) develop an IT-enabled workforce; 3) develop the country as a world-class ICT services provider; 4) create an enabling legal and regulatory environment; and, 5) provide affordable internet access to all segments of the population.

ITECC identified specific priority projects to be completed by 2004 for each of the five goals it has identified. For instance, for the goal of developing the Philippines as a world-class ICT service provider, ITECC is undertaking the following projects for 2003-2004: Setting Quality Standards and Certification

for Individuals in support of IT Services and IT-Enabled Services; Implementing a Sustainable ICT skills survey; International Communications and Marketing Program; Aggregation of IT Services and IT-Enabled Services groups with an industry-wide portal; Developing Small and Medium IT Enterprises; R&D program for niche ICT products in Centers of Excellence and Enabling CMM Certification for ICT firms.

## SRI LANKA

e-Sri Lanka's vision is to "take the dividends of ICT to every village, to every citizen, to every business and also transform the way Government works."<sup>8</sup> The country hopes to achieve this vision by 2007 through a five-program strategy.

**Program 1 – BUILD IMPLEMENTATION CAPACITY.** This program calls for enhancing government's ability to realize the e-Sri Lanka vision. It tasks the Prime Minister to lead in setting the overall ICT strategy and communicating the e-Sri Lanka, calls for the appointment of a National Task Force to give ICT Policy directions, and the creation of an ICT agency.

**PROGRAM 2 - BUILD NATIONAL INFORMATION INFRASTRUCTURE AND ENABLING ENVIRONMENT.** This program calls for enhancing the existing competition-centered communication policies and the establishment of the independent Telecommunications Regulatory Commission. It also calls for an aggressive infrastructure development roadmap that will respond to the communication needs of all segments of business and society and is able to mobilize private sector investment.

**PROGRAM 3 - DEVELOP ICT HUMAN RESOURCES.** Strategies for human resource development and for stimulating the ICT industry are based on emerging opportunities in three key segments: 1) software products for new applications and markets; 2) Global Software Services market; and, 3) Global market for ICT-enabled services and business process outsourcing.

**PROGRAM 4 - e-GOVERNMENT: DELIVERING CITIZEN SERVICES.** Included in this program is a detailed study on priority e-government needs, applications and milestones leading up to the establishment of an e-government roadmap and action plan.

**PROGRAM 5 - USE ICT AS A KEY LEVER FOR ECONOMIC AND SOCIAL DEVELOPMENT.** This program will focus on societal applications and content development targeted at poverty reduction and social development, connectivity and telecenters to promote access to the Internet and computer literacy, and the use of mass media for broad based dissemination of information and knowledge

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<sup>8</sup> <http://www.esrilanka.lk/>

In order to be successful, government has recognized that e-Sri Lanka master plan need to get the support and engagement of all sectors of society including - the Legislature, the Executive, the Public Sector, the Private Sector, the Academia, the Donor Community, the NGO's and the people of Sri Lanka.

### **Low Income Economies**

India is the clear leader in ICT development in this cohort. As early as 1971, it established a Department of Electronics (DoE) that is responsible for recommending and implementing policies for the country's IT sector. This early focus has created a globally significant software industry. On the other hand, Vietnam began its push for ICT development only in the 1990s. And by 2000, the Communist Party of Vietnam has officially acknowledged that "IT use in Vietnam... is still backward. Progress is slow, creating the risk of a growing gap compared to many countries in the world and in the region."<sup>9</sup>

#### **INDIA**

Until the 1980s, India was pursuing a restrictive import-substituting policy regime. But in the early 1990s, the Rao Administration introduced sweeping economic reforms that lead to the restructuring of the information and communications sectors.<sup>10</sup>

India is currently on its 10<sup>th</sup> 5-year Plan. For the IT sector, the objectives identified by government in this plan are: 1) ensuring the sustained growth of software and IT-enabled services and increase India's share in the global IT market as well as expanding the domestic market; 2) putting in place a policy framework to make India a major force in hardware manufacturing sector; 3) greater use of IT in governance; 4) bridging the digital divide; 5) promoting the development of software in Indian languages government; and, 6) improving the quality of manpower, skills and research and development in the sector. The strategy for the 10<sup>th</sup> Plan include specific initiatives for Hardware Development; Software Development and Marketing; Human Resources Development; Legal and Regulatory Issues; Financial Issues; Convergence; e-Governance; Computer Penetration, Affordability and Digital Divide.

The 10<sup>th</sup> plan also identified major initiatives and projects to be pursued. These includes: encouraging new Software Technology parks; setting up Community Information Centers; developing Indian Languages Interfaces to Computers and IT; encouraging e-Commerce and e-Governance; the Media Lab Asia; training and research on IT security; Human Resources Development, particularly addressing the lack of qualified faculty and poor infrastructure in technical education and, on a pilot basis, providing

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<sup>9</sup> The National Steering Committee on Information Technology *Policies and Legal Documents on Information and Telecommunication Technology of Vietnam* (Hanoi, 2002) p 15

<sup>10</sup> Ben A. Pertrazzini and G. Harindranath "Information Infrastructure Initiative in Emerging Economies: The Case of India" in Brian Kahin and Ernest Wilson (eds) *National Information Infrastructure Initiatives: Vision and Policy Design* (Cambridge, MA: MIT Press, 1997) p. 220

connectivity to Government Senior Secondary Schools and upgrading IT infrastructure in higher learning institutions.

The 10<sup>th</sup> plan also identified Information Technology-Enabled Services as a major growth market for India. Tellingly, the 10<sup>th</sup> plan declares that “(s)ince the Indian IT industry has matured enough, the IT-enabled services are expected to grow through private initiatives...”

The 10<sup>th</sup> plan reaffirmed government’s ‘hands-off policy’ towards the IT sector and ‘will confine itself to being a facilitator and a catalyst for accelerated growth of the sector.’ This is consistent with the overall thrust of the 10<sup>th</sup> Plan where the role of the Government in production will continue to decline while increasing in the provision of better public services and a better regulatory environment for private enterprises.

The Telecoms sector has not received as much government attention as IT. Reform in the telecommunications sector began in 1994.

India’s 1999 Telecoms policy recognizes that provision of world-class telecommunication infrastructure and information is the key to rapid economic and social development of the country. It is critical not only for the development of the Information Technology Industry, but also has widespread ramifications on the entire economy of the country. It is also anticipated that going forward, a major part of the GDP of the country would be contributed by this sector. Accordingly, it is of vital importance to the country that there be a comprehensive and forward looking Telecommunications policy which creates an enabling framework for development of this Industry.

## NEPAL

Nepal’s IT policy aims to put the country on the global IT map by 2005.<sup>11</sup> Its objectives are: 1) to make IT accessible to the general public and increase employment through this means; 2) create a knowledge-based society; and 3) to establish knowledge-based industries.

The policy spells out the following 15 strategies to realize the vision: 1) For the Government to act as a IT promoter, facilitator and regulator; 2) To accord high priority to research, development and extension of IT with participation of private sectors; 3) To develop competent manpower; 4) To encourage domestic and foreign investment in the development of IT and the related infrastructures; 5) To place on the global map of information technology; 6) To promote e-Commerce with the passage of appropriate laws; 7) To use IT for e-governance; 8) To apply IT for rural development; 9) To promote the IT sector; 10) To provide speedy and qualitative service at a reasonable cost by creating a healthy and competitive atmosphere among IT service providers;

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<sup>11</sup> [http://www.npc.gov.np/it/it\\_policy.pdf](http://www.npc.gov.np/it/it_policy.pdf)

11) Incorporation of computer education in the academic curriculum starting from the school level; 12) Enhancement of professional efficiency through the use of IT; 13) Extension of IT networks to rural areas; 14) To place the country on the international market through IT; 15) Increase export of services related to IT (software and hardware) shall be increased to 10 billion rupees by 2005.

Nepal's IT plan also identified 16 activities that constitutes its IT Policy. These includes declaring IT as a policy priority, gradually providing internet access to all of the country's Village Development Committees, computerize the system in all government offices, develop--with private sector participation—IT parks, promote e-Commerce, e-Health, and enacting necessary laws. The Action Plan for implementing the IT policy include: 1) participation of the private sector in infrastructure development; 2) infrastructure development; 3) human resources development; 4) dissemination of IT; and 5) promotion of e-Commerce, etc.

## VIETNAM

Directive No 58-CT/TW On Accelerating the Use and Development of Information Technology for the Cause of Industrialization, Modernization of the Communist Party of Vietnam is the touch stone document for ICT development in the country. Directive 58 identifies IT as "one of the most important enabling forces for development" which "creates deep changes in the social, economic and cultural life of the modern world." The document identifies three principal objectives to be achieved in Vietnam by 2010:

- IT use shall be increased in every sector.
- The national information network shall be developed to reach nationwide coverage.
- IT industry shall become a spearhead economic sector with a growth rate higher than any other sectors of the economy.

Directive No. 58 enumerates 5 guiding views and 5 tasks to be undertaken by all sectors and all levels.

Directive No. 58 was subsequently adopted by the government through Decision No 81/2002/QD-TTG of the Prime Minister on Approving the Action Plan to Implement the Directive No. 58-CT/TW on Stepping up the Application and Development of Information Technology in the Cause of Industrialization and Modernization in the 2001-2005 period. Decision No. 95/2002/QD-TTG of the Prime Minister on Approving the Master Plan for Information Technology Use and Development in Vietnam by 2005 identified 5 goals for IT use and development for the country

Vietnam is currently drafting a new ICT master plan known as Strategy for the Development of Information and Telecommunication Technology (ICT) of Vietnam Until 2010 And Orientation Until 2020. The proposed strategy has four components: ICT infrastructure, ICT industry, ICT applications and ICT human resources. Those four components are inter-related and they support one another's development.

Three stakeholders are seen to develop and promote the four components of the draft master plan. The key stakeholders and their roles are as follows:

- The government, which will create the legal framework, develop the institutional arrangements, policies with regard to ICT development. The government will play the key role in coordination and cooperation, training, international co-operation as well as promote the ICT development.
- Entrepreneurs, particularly small and medium entrepreneur that will participate in making investment, supplying products and services, developing the market etc. They will participate with the Government in developing and implementing ICT development policies.
- The users who will indirectly make investment in the market, participate in designing and improving quality the products and services. They will also participate with the Government in developing and implementing ICT development policies.

## II Comparing e-Policies

### *Information Infrastructure*

Given their early focus on developing the IT and communications sector, it is not surprising that the high income economies in this study are already preoccupied with broadband deployment. It is also important to note that the government of these countries took an active role in the construction of national broadband networks.

**Table 4  
NATIONAL INFORMATION INFRASTRUCTURE - I  
POLICY ENVIRONMENT**

	Information Infrastructure Initiatives/Telecoms Policy
Japan	e-Japan Priority Policy Program calls for the formation of the world's most advanced information and telecommunications networks, that includes "Fiber to the Home" (FTTH)
Korea	<p><b>Korean Information Infrastructure (KII) master plan.</b> Drafted in 1995 the goal was to build three kinds of high-speed networks such as KII-Government, KII-Public, and KII-Testbed by 2005. In 2000, when the second stage of the total three stages was completed, high-capacity and high-speed optical transmission backbone networks were constructed throughout Korea. In particular, to upgrade internet speed in homes, many new technologies have adopted ADSL, cable modem and satellite data communication. This project paved the way for the successful rollout of broadband internet in Korea.</p> <p><b>eKorea vision</b> calls for high-speed internet of at least a 1Mbps level is to be considered as "social overhead capital" to ensure that every Korean citizen has access to high-speed internet at a low charge anywhere in the country by 2005.</p> <p><b>Closing the Digital Divide Act</b> This was enacted on January 16, 2001 to reduce gaps in the access and use of information technology by supporting low-income earners, the handicapped and the elderly, who are at a disadvantage in information usage due to economic, physical and social conditions.</p>
Singapore	<p><b>IT2000 Masterplan (1992-2000)</b> sought to transform the country into an Intelligent Island where information technology (IT) is exploited to the fullest to enhance the quality of life of the population at home, work and play. Among the initiatives implemented under this plan is Singapore ONE. This nationwide information network is comprised two distinct but integrated levels: 1) a broadband infrastructure level of high-capacity networks and switches; 2) advanced applications and services that take advantage of the infrastructure's high-speed and high-capacity capabilities.</p>
Malaysia	Communications and Multimedia Act 1998 / Act 588

	<p>Based on the objectives of the Act, the Ministry of Communication, Multimedia and Energy set the following targets: 1) <b>To Increase Penetration Rates</b> to reach 50 and 25 for every 100 population for the country as a whole and for rural areas respectively by 2020. An interim target of 30 per 100 persons has been set for the country as a whole by the year 2005. 2) <b>Quality Service At Affordable Costs.</b> 3) <b>Infrastructures Development</b> Communications and multimedia infrastructures will be adequate and effective in supporting overall economic development. 4) <b>Creation Of A Hub</b> The country will be developed as a global hub for the communications and multimedia industry in this region.</p>
Philippines	<p><b>Public Telecommunications Policy Act of 1995 (Republic Act 7925)</b>  liberalized telecommunications services by allowing multiple operations of local service providers in most segments of the domestic and international telecommunications markets. The law, however, imposes significant constraints for convergent industries by providing that an entity cannot engage in both telecommunications and broadcasting under a single franchise.</p>
Sri Lanka	<p><b>eSri Lanka</b>  Targets 5% for fixed line penetration by 2007, and a similar target for mobile lines; National backbone development and networking to global backbones will be addressed as a top priority; Rural connectivity, National backbone development and fiber wiring a few hot spots, commercial centers in the capital and surrounding business cluster and key industrial parks in Sri Lanka</p> <p><b>Proposed National Communications Policy (Ministry of Mass Communication)</b>  Support the establishment and promotion of a modern and efficient Sri Lanka Information Infrastructure (SLII), with focus on convergence of Information Technology, Media and Telecommunications as well as new Information and Communication Technologies (ICTs) such as the Internet, Electronic Commerce and Electronic Government.</p>
India	<p><b>1999 National Telecoms Policy of India</b>  Seeks to provide affordable and effective communications for the citizens; balance between the provision of universal service to all uncovered areas and the provision of high-level services capable of meeting the needs of the country's economy; create a modern and efficient telecommunications infrastructure taking into account the convergence of IT, media, telecom and consumer electronics and thereby propel India into becoming an IT superpower.</p>
Nepal	<p><b>Telecommunications Act, 1997 &amp; Telecommunications Regulation, 1997.</b>  To create a favorable and competitive environment for the development, expansion and operation of telecommunications services in Nepal.</p> <p><b>Nepal IT Policy (2000)</b>  Calls for the creation of an "info-super highway and a north-south info-highway"; internet nodes in all development regions by 2001/2002 and in district headquarters in 2003/2004</p>
Vietnam	<p><b>Decision No. 158/2001/QD-TTg of the Prime Minister on the</b></p>

	<p>approval of Vietnam's Post and Telecommunication Development Strategy until 2010 and Orientation until 2020</p> <p><b>Draft ICT Master plan</b>  Envisions an "efficiently and coherently applying/operating market mechanisms with a socialist direction under the state administration in the fields of Posts and Telecoms and informatics." By 2020, Vietnam shall reach the advanced standard in ASEAN in terms of Informatics technology and telecommunication infrastructure (being one of three top countries in ASEAN)</p>
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Of the three, Korea is unique in that it has a digital divide law that targets those who are disadvantaged in information usage due to economic, physical and social conditions.

All but one country in the study have moved away from monopoly towards competition in the provision of telecommunications services. However, in the fixed line business the incumbents remain the dominant players. For instance, while there are 4 fixed line licensees in Vietnam, 90 percent of the total revenue in Telecom and Internet services is generated by Vietnam Post and Telecommunications. VNPT has biggest market share in terms of network, services and clients. Almost 100 percent of the basic services and 65 percent of Internet services are now being provided by VNPT.

There is greater competition in the mobile/cellular business.

Foreign participation in telecoms services is limited.

**Table 5**  
**NATIONAL INFORMATION INFRASTRUCTURE - II**  
**MARKET STRUCTURE**

	Fixed Line Licensees	Mobile Licensees	No. of ISPs
Japan	NTT East, NTT West, KDDI, Japan Telecom, TTNNet, Kyushu Telephone	NTT DoCoMo, KDDI, J-Phone, Tu-Ka, Astel	
Korea	Korea Telecom, Hanaro Telecom	SK Telecom, KG Freetel, LG Telecom	
Singapore	SingTel, StarHub	SingTel Mobile, MobileOne, StarHub Mobile	
Malaysia	Telekom Malaysia, Celcom, Maxis, DiGi, TimedotCom	Telekom Malaysia, Celcom, Maxis, DiGi, TimedotCom	

Philippines	PLDT, Smart, Pilipino Telecom, Globe Telecom, IslaCom, Digital Telecom, BayanTel, PT&T, Phil Global Com, Eastern Telecom, PAPTELCO, TELOF	Smart/Pilipino Telecom, Globe Telecom/IslaCom, Express Telecom, Sun Cellular	
Sri Lanka			23 licensees
India	MTNL, Tata, Bharti, Hughes, BSNL	Aircel, Bharti, Birla AT&T, BPL, Escotel, Fascel, Hexacom, Hutchison Max, JTM/Evergrowth, Koshika, MTNL, Reliance Telecom RPG, Spice Comm, Sterling Cellular, Tata Cellular, Usha Martin	More than 100, expected to reach 175
Nepal	Nepal Telecommunications Corp		12 ISPs
Vietnam	Vietnam Post and Telecommunications (VNPT), Vietnam Telecom National (VTN), Vietnam Telecom Intl (VTI), Vietnam Datacommunication Company (VDC)	Mobiphone, Vinaphone, Viettel	6 licensed IXPs, 13 licensed ISPs, 10 licensed to provide VOIP

Source: *Factbook on the Telecom and IT Industry in Asia, January 2002*

### *Legal and Policy Environment*

Given the interest on how ICT can help countries develop, it is also not surprising that almost all countries have electronic transaction laws, with the exception of Sri Lanka and Nepal which have pending legislation. Some countries have taken an omnibus approach to electronic transaction regulations—including as many topics in one law. Others, notably Malaysia have a set of laws that can be collectively seen as ‘cyberlaws’ (as the Malaysian laws related to ICT development are indeed called)

**Table 6  
LEGAL AND POLICY ENVIRONMENT - I  
ELECTRONIC TRANSACTION LAWS**

Country	Electronic Transaction Laws
Japan	Law Concerning Electronic Signature and Certification

	<p><b>Services</b> This E-Signature Law, enforced April 1, 2001, aims to ensure the easy use of electronic signature and prompt electronic data exchange.</p>
Korea	<p><b>Digital Signature Act</b> Deals with the issues on digital signature of Public Key Infrastructure. Enacted and promulgated on February 5, 1999 and later enforced on July 1st.</p> <p><b>Framework on E-commerce Act</b> Vests digital document with the same level of legal effect as that of a written document, securing the reliability of e-commerce, protecting consumers and driving forward the policy for e-commerce promotion. Enacted on February 8, 1999</p> <p><b>Promotion of the Digitization of Administrative Work for the E-government Realization Act</b> To promote the digitization of administrative work, such as digitization of administrative management, service digitization, reduction of document work, and promotion of e-government project to improve productivity, security, and social equality of administrative institutions. Enacted on March 28, 2001</p>
Singapore	<p><b>Electronic Transactions Act</b> Provides legal recognition of electronic contracts and electronic signatures, Clarifies the liability of network service providers that merely carry traffic. Established the voluntary licensing of certification authorities as trusted third parties. Enacted in 1998.</p> <p><b>Evidence Act</b> The original Act was amended in 1995 to provide for the admissibility of computer output as evidence in court. The <i>Evidence (Computer Output) Regulations 117</i> establishes the criteria for certifying imaging systems that can archive documents in an electronic form.</p>
Malaysia	<p><b>Digital Signature Act 1997 (Act 562)</b> Gives digital signature the same legal effect as hand-written signature, thumbprint or mark.</p>
Philippines	<p><b>Electronic Commerce Act of the Philippines (RA 8792)</b> Gives legal recognition to electronic documents, electronic signatures and electronic transactions. This law applies to any kind of electronic data message, electronic document used in commercial and non-commercial activities and/or transactions, including electronic transactions in government. Also gives legal recognition to electronic/digital signatures.</p>
Sri Lanka	<p><b>Computer Crimes Bill</b> Will provide legal recognition of digital signature which is seen the basis for e-commerce and electronic data interchange.</p>
India	<p><b>IT Act 2000</b> Provides for the legal recognition of electronic contract and digital signatures; created Controller for Certifying Authorities and Cyber Appellate Tribunal</p>
Nepal	<p><b>Draft Electronic Transactions Act</b></p>

Vietnam	<p><b>Electronic Transactions</b>  <i>Decision No. 44/2002/QD-TTg</i> of the Prime Minister on using electronic documents as accounting documents for calculation and payment of capital in Payment Service Supplying Organization.</p> <p><b>Digital signature</b>  <i>Decision No. 534/2002/QD-NHNN</i> of the Governor of the State Bank of Vietnam on issuing provisions on establishing, issuing, controlling and using digital signatures on electronic documents in inter-bank electronic payments.</p>
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All 9 countries have addressed the issue of network/computer security. Majority of the countries have enacted new laws. Two countries--Sri Lanka and Nepal—have pending ICT/computer crime bills before their respective legislatures. Vietnam takes the tack of applying its existing Criminal Code to ICT/computer related crimes.

**Table 7**  
**LEGAL AND POLICY ENVIRONMENT - II**  
**NETWORK/COMPUTER SECURITY**

Country	Security Regulations
Japan	<p><b>Unauthorized Computer Access Law (Law No. 128 of 1999)</b>  penalizes unauthorized computer access and computer-related crimes that are committed through telecommunication lines.</p> <p><b>Action Plan for Building Foundations of Information Systems Protection from Hackers and Other Cyberthreats</b>  Adopted by the Interagency Director-Generals' Meeting on IT Security on 21 January, 2000</p>
Korea	<p><b>Utilization and Security of the Information System and Protection of Personal Information Act</b>  Calls for promoting utilization of the information communications network and securing internet address resources, digital messaging usage, protection of personal information for information communications service users, protection of youth from lecherous and violent materials, security of the information communications network, control of infringement on the information communications network, and restriction of 'SPAM' mails. Enacted on 2001</p> <p><b>Protection of Major Information Infrastructure Act</b>  Establishes a systematic and comprehensive countermeasure for the protection of major information communications infrastructure against electronic. Enacted on January 2001.</p>
Singapore	<p><b>Computer Misuse Act</b>  The Act, passed in 1993, created new offences to deal specifically with unauthorized access and modification of computer systems. In 1998, the Act was further amended to address new attacks that had evolved with the spread of the Internet (e.g. denial-of-service attacks) and meted out harsher</p>

	punishment for those who attack critical IT systems/networks.
Malaysia	<b>Computer Crimes Act 1997 (Act 563)</b> Provides four main categories of offenses: unauthorized access to computer material; unauthorized access with intent to commit or facilitate commission of further offence; unauthorized modification of the contents of a computer; and, wrongful communication of the means of access
Philippines	<b>E-Commerce Act (RA 8792)</b> While there is no unique Philippine law on cybercrimes, there are provisions on cybercrimes in the eCommerce Act. This law penalizes hacking and online piracy.  <b>Access Devices Regulation Act of 1998</b> which punishes credit card fraud and outlaws the use of unauthorized access devices to obtain goods or services broadly;
Sri Lanka	<b>Computer Crimes Bill</b>
India	<b>IT Act 2000</b> Defines hacking and provides punishment for it (imprisonment up to three years or fine)
Nepal	<b>Draft Electronic Transaction Act, 2001</b> Prepared by the Ministry of Science and Technology contains 12 chapters including Electronic Documents and Digital Signature, Transactions and Acceptance of Electronic Documents, Provision for Controller and Certification Institution, Electronic Document and Digital Signature in Government Offices, Provision of Electronic Transaction Court, Provision for Electronic Transaction Appeal Court
Vietnam	<b>Criminal Code of Vietnam.</b> Covers computer and communication crimes

Most countries also have laws and rules regarding objectionable Internet content. While most common prohibited content are those deemed pornographic, a number also regulate political content. The Philippines is perhaps the most libertarian of the countries in the study because it has no internet content regulation or rules.

**Table 8**  
**LEGAL AND POLICY ENVIRONMENT - III**  
**CONTENT MANAGEMENT**

Country	Content
Japan	

Korea	<p><b>Management of the Digital Contents Act</b> To promote the digitizing of public analog content and the flow of digital content, so that the public and private sectors can actively utilize information knowledge resources. Enacted on January 28, 2000.</p> <p><b>Public Record Management of the Public Institutions Act</b> Calls for a uniform scheme on record management regarding a clear and systematic base for collection and maintenance of major public record materials, such as the National Assembly, government and court of justice, and local self-governing bodies. Enacted on January 29, 1999.</p>
Singapore	<p><b>Internet Code of Practice</b> Drafted by the Singapore Broadcasting Authority in 1997 establishes the guidelines for acceptable content that can be published over the Internet.</p> <p><b>Internet Content Code</b> Voluntary code to deal with the types of content industry players should be putting on the Internet. The main obligations for content providers adopting the code include:</p> <ul style="list-style-type: none"> <li>• not knowingly place inappropriate, objectionable, or illegal content on the Internet;</li> <li>• to use their best efforts to ensure that no content deemed unsuitable for minors is made available to them freely on their service;</li> <li>• adopt an appropriate content classification system to rate and label their websites;</li> <li>• comply with the <i>Singapore Code of Advertising Practice</i> published by the Advertising Standards Authority of Singapore (ASAS).</li> </ul>
Malaysia	<p><b>Communications and Multimedia Act of 1998</b> Makes it an offense to provide content which is indecent, obscene, false, menacing or offensive in character with intent to annoy, abuse, threaten or harass any person. Other laws (including the Penal Code, Sedition Act, and Internal Security Act) apply to content regulation of the internet.</p>
Philippines	No content regulation
Sri Lanka	
India	<p><b>IT Act 2000</b> Proscribes penalties for those who publish in electronic form 'any material which is lascivious or appeals to the prurient interest or if its effect is such as to tend to deprave and corrupt persons...'</p>
Nepal	
Vietnam	<p><b>Decree No. 55/2001/ND-CP of the Government of the Management, Provision and Use of the Internet Services</b> Chapter III, Articles 28, 32 and 33 are on managing information on the internet.</p>

Due to the international movement to protect Intellectual Property, supported by global IT and entertainment corporations, it is not surprising that a number of the countries in the study have intellectual property laws specific to digital documents/content or have amended their laws to take care of the same.

**Table 9**  
**LEGAL AND POLICY ENVIRONMENT - IV**  
**INTELLECTUAL PROPERTY REGIME**

Japan	<p><b>Unfair Competition Prevention Law (Amendment)</b> Amendments of the law are following.</p> <ol style="list-style-type: none"> <li>1. The Japanese government added the new Act of Unfair Competition which defines registration, possession or usage of the domain name which is identical or similar to another person's trademark in bad faith.</li> <li>2. Someone whose business interests are infringed or are likely to be infringed by the added new Act of Unfair Competition becomes entitled to request preventive injunction and/or claim for damages.</li> </ol>
Korea	<p><b>Laws on Protection of Intellectual Property Rights</b> Korea stipulated the transmission right of copyright holder and allowed the replication and transmission between libraries via data processing device by the amendment of the Copyright Act in January 2000. In addition, the Computer Program Protection Act was amended several times to establish a computer program transmission right, banning activities incapacitating technical protection measures and allowing reverse analysis of programs.</p>
Singapore	<p><b>Copyright Act</b> The Act, passed in 1987, primarily deals with the protection of copyright in works. Computer programs are included as copyrightable works. The Act was amended in 1999 to clarify the concept of temporary reproduction in the Internet browsing environment, and introduction of "take down" provisions to deal with problems of unauthorized copies of works being made available through the Internet</p>
Malaysia	<p><b>Copyright (Amendment) Act of 1997</b> Provision for copyright owners to have the exclusive right to control in Malaysia the communication to the public of a literary, artistic or musical work and a film or sound recording; also provides for derivative works to be included as subject matter for copyright protection and enlarges the scope of infringement.</p>
Philippines	<p><b>Intellectual Property Code of the Philippines</b> Codified the Philippines' commitment to international conventions and treaties on IPR and WTO- TRIPS (trade-related aspects of intellectual property rights). Took effect on January 1, 1998</p>
Sri Lanka	<p><b>Code of Intellectual Property Act No.52 of 1979 as amended by (Amendment) Act 13 of 1997.</b> The said Act revised, consolidated, amended and embodied in the form of a code the law relating to Copyright, Industrial Designs, Patents, Marks, Trade Names, and Unfair Competition, and provided for the better registration, control and administration.</p>
India	<p><b>Copyright Act of 1957 as amended in 1994.</b> The new law is compatible with Trade Related Aspects of Intellectual Property (TRIPS) from the stand point of substantive rights, except that the term of protection for performers should be increased from 25 to 50 years</p>
Nepal	

Vietnam	<p>Decree No. 76/CP of the Government on Guiding the Implementation of a Number of Provisions on Copyrights in the Civil Code</p> <p>This Decree is further supported by Circular No. 27/2001/TT-BVHTT of the Ministry of Culture and Information on Guiding the Implementation of Decree No. 76/CP and Decree No. 60/CP of the Government on Guiding the Implementation of some Provisions on Copyright in the Civil Code.</p>
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But, as the Business Software Alliance, continues to remind us, the enactment of laws protecting copyright and/or intellectual property is different from their enforcement.

The same can be said of privacy and personal data protection, which from a policy formulation and/or legislation perspective has received adequate attention.

**Table 10**  
**LEGAL AND POLICY ENVIRONMENT - V**  
**DATA PROTECTION/PRIVACY**

Japan	<p>Law on the Protection of Personal Information</p> <p>Law Concerning the Protection of Personal Information Held by Administrative Organs</p> <p>Law Concerning the Protection of Personal Information Held by Independent administrative agencies and other organizations</p> <p>Law of the Examining Committee on Information disclosure and the protection of personal information</p> <p>Preparation Law on enforcement of the Law Concerning the Protection of Personal Information Held by Administrative Organs</p>
Korea	<p>Privacy Act</p> <p>It aims to prevent infringement of privacy due to unjust usage and illegal hacking of personal information. It clearly specifies the criteria for the collection and processing of personal information and guarantees various rights for the information owner on disclosure and correction of personal information. Enacted on January 7, 1994.</p>
Singapore	<p>Data protection code</p> <p>Voluntary code that articulates a set of principles governing the collection, use, safeguarding, etc. of personal information by service providers. The code provides for 11 data protection principles, differentiated roughly according to the different stages of data processing: Accountability;</p>

	Identifying purposes; Consent; Limiting collection; Limiting use, disclosure and retention; Accuracy; Safeguards; Openness; Individual Access; Challenging compliance; and, Transborder data flows.
Malaysia	<b>Communications and Multimedia Act</b> Has provision on protection of privacy and integrity of electronic communications
Philippines	<b>Electronic Commerce Act of 2000</b> penalizes unlawful and unauthorized access to computer systems  <b>The Anti-Wire Tapping Act</b> which makes it unlawful for any person, not being authorized by all the parties to any private communication or spoken word, to tap any wire or cable, or by using any device or arrangement, to secretly overhear, intercept, or record such communication or spoken word.
Sri Lanka	
India	
Nepal	
Vietnam	

### *Policy and Regulatory Agencies*

Most countries have the Head of State/Government lead the national ICT policy making bodies--indicating the importance that they are giving to ICT development. In the cases where a Minister/Ministry leads in policy formulation ( Singapore, Korea, and Vietnam), the minister/ministry have already been reorganized to bring all communications, IT and IT-related issues. While India has IT and Telecommunications under the umbrella of the Ministry of IT and Telecommunications, within this ministry are separate Department of IT and Department of Telecommunications.

**Table 11**  
**POLICY MAKING AND REGULATORY BODIES - I**  
**ICT POLICY MAKING BODIES**

Country	Bodies/Institutions
Japan	<b>The Strategic Headquarters for the Promotion of an Advanced Information and Telecommunications Network Society</b> The IT Strategic Headquarters is headed by the Prime Minister. Members include State Ministers and “those having superior insights into the formulation of an advanced information and telecommunications network society who have been appointed by the Prime Minister”.
Korea	<b>Ministry of Information and Communication (MIC)</b> The Ministry of Communication was expanded in December 1994 to unify the scattered functions of IT related works and strategically nurture the IT industry as an engine of the nation's economic growth. The MIC is responsible for informatization, information & communication, radio & broadcasting, postal and postal financial services. <a href="http://www.mic.go.kr/index.jsp">http://www.mic.go.kr/index.jsp</a>

Singapore	Ministry of Information, Communication and the Arts (MITA) formulates and administers policies to regulate and develop the infocomms industry (w/c includes telcoms/IT/Postal Service) through the Infocomms Development Authority. MITA also supervises Singapore Broadcasting Authority (SBA)--the agency responsible for regulating broadcasting and Internet content
Malaysia	National IT Council (NITC) Established in 1994, chaired by Prime Minister Mahathir, composed primarily of government ministers with private sector participation
Philippines	Information Technology and eCommerce Council (ITECC) Established in 2000 and reorganized in 2001, is chaired by President Gloria Macapagal Arroyo, with equal representation from government and private sector. <a href="http://www.itecc.gov.ph">www.itecc.gov.ph</a>
Sri Lanka	Council for Information Technology <a href="http://www.cintec.lk">www.cintec.lk</a>
India	Ministry of Information Technology and Telecommunications
Nepal	National Information Technology Development Council Chaired by the Prime Minister, composed of government ministers. A National Information Technology Coordination Committee, chaired by the Minister of Science and Technology and consisting of relevant ministers, IT sector reps, academe looks after R&D, HRD
Vietnam	Ministry of Post and Telematics (MPT) was assigned by the National Assembly in 2002 to be the leading agency and the key driver and facilitator for developing the ICT industry and strategies for national ICT development

A number of countries have also created one regulatory agency to handle telecommunications and IT, in recognition of the convergence of information and communications technologies. This is certainly true of Malaysia's Communications and Multimedia Commission. In the case of the Philippines, one agency--the National Telecommunications Commission—has oversight and/or regulatory function over telecommunications, broadcasting and the Internet but they might as well been housed under different agencies as different rules govern the three sectors.

**Table 12**  
**POLICY MAKING AND REGULATORY BODIES - II**  
**REGULATORY ENVIRONMENT**

Country	Regulatory Agencies
Japan	Ministry of Public Management, Home Affairs, Posts and Telecommunications
Korea	Korean Communications Commission
Singapore	Infocomms Development Authority (IDA) IDA is regulator telecommunication and postal services by IDA.

	<p><b>Singapore Broadcasting Authority (SBA)</b>  responsible for regulating broadcasting and Internet content.  SBA established a class licensing scheme WHICH provides the framework under which content providers on the Internet are licensed,</p>
Malaysia	<p><b>Malaysian Communications and Multimedia Commission</b>  The Malaysian Communications and Multimedia Commission Act 1998 (Act 589) (MCMCA) provides for the establishment of the MCMC with powers to supervise and regulate communications and multimedia activities in Malaysia.</p>
Philippines	<p><b>National Telecommunications Commission</b>  Regulates telecommunications and broadcasting. Internet services, which falls within value-added services, are not regulated. Hence, Internet Service Providers (ISPs), as long as they do not put up their own networks are subject to the minimum requirement of registration with the NTC and the quarterly submission of reports on their operations.</p>
Sri Lanka	<p><b>Telecommunications Regulatory Commission of Sri Lanka</b>  Provides the policy and regulatory framework for the telecommunications industry, and is increasingly dealing with issues of media convergence</p>
India	<p><b>Telecommunications Regulatory Authority of India</b></p>
Nepal	<p><b>The National Information Technology Centre (NITC)</b>  under the Ministry of Science and Technology the facilitator and regulator for IT development of IT Nepal</p> <p><b>Telecommunications Authority (NTA)</b>  is an autonomous regulatory body established in accordance to the Telecommunications Act, 1997 and Telecommunications Regulation, 1997. Its objective is to create a favourable and competitive environment for the development, expansion and operation of telecommunications services</p>
Vietnam	<p><b>General Directorate of Post and Telecommunication</b>  Agency in-charge of Internet and telecommunication management, monitoring and development. <i>Decree No. 55/2001/ND-CP</i> on the management, provision and use of Internet services, which regulates the issuance of license, and the publishing and management of information on the Internet.</p>

### III Education and ICT<sup>12</sup>

A population adept at using technology for its own purposes is the goal of the countries in this study. As in the overall ICT master plan, the three high income countries in this study have already implemented multiple ICT in Education master plans in their respective economies. On the other hand, the lower income countries are at best only beginning to implementing such plans.

#### JAPAN

Japan's strategic goal, as outlined in the Basic Plan for Science and Technology, is the promotion of interest, learning and understanding of science and technology. The Plan aims at establishing Japan as a nation based on the creativity of science and technology. In the area of education, the plan focuses on the improvement of science and technology education through the provision of better teacher training, the supply of adequate equipment as well as improved facilities for science and industrial education, introduction of educational computers, the conduct of practical research on Internet use in education, and educational software development promoting the establishment of a Educational Software Library Centre across the nation.

Japan is also pursuing the Informatization of Education (also known as the Millennium) Project.<sup>13</sup> Its two-fold purpose are: 1) to enable children to use computers appropriately, by cultivating in them the ability to utilize information and transmit it themselves by sorting out the necessary information without being led astray by erroneous information and unnecessary information; and 2) to enable children to think about their own way of life by having them acquire ways to learn and think by actively using computers and the Internet for studying each subject, and by cultivating attitudes toward independently and creatively engaging in problem-solving and inquiry.

Specifically, the project aims to achieve the following goals by 2005:

- (1) Installation of computers at public schools (two in all ordinary classrooms and six for each school for use in special classrooms);
- (2) Internet access at all public schools;
- (3) Installation of intra-school LAN linking classrooms at public schools;
- (4) Installation of computers and Internet access at private schools;
- (5) Implementation of teacher training;
- (6) Development of contents for understandable classes;
- (7) Development of functions of the National Center for Education Information.

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<sup>12</sup>All country documents for this section, except for Nepal, are available at [http://www.unesco.org/bangkok/education/ict/ict\\_enabling/ap\\_policy/main.htm](http://www.unesco.org/bangkok/education/ict/ict_enabling/ap_policy/main.htm)

<sup>13</sup> Japanese Government Policies in Education, Science, Sports and Culture 2000: Toward a Culturally-Oriented Nation <http://www.wpp.mext.go.jp/eky2000/index-13.html#ss1.2.5.1>

## KOREA

Korea intends to adapting education to the information age through changing the educational system as a whole--the physical infrastructure, the institutions involved, classroom environments and human minds.

The project for adapting education for the information age started in July 1970. In early 1990, state policy was outlined by the Framework Act for the Promotion of ICT, and in July 1996, the Enforcement Plan for Adapting Education to the Information Age was formulated.

The specific tasks to adapt education to the information age are carried out in four categories; in elementary and secondary education, in research and universities, in educational administration, and in lifelong education. The goal for adapting information to the current society is to foster creative human resources through implementation of open education, lifelong learning, and a cyber learning system.

Under the Elementary and secondary education category, at least one computer lab has been built in every elementary and secondary school, fulfilling the necessary physical conditions for internet access for every student, with free or almost-free internet access at schools with relevant institutes since July 2000.

In the year 2001, computer education became compulsory from the first grade of elementary school. Also, in every subject, more than 10% of classroom activities are supposed to make use of computers. In order for this to work effectively, an information literacy certification system is now being used to evaluate and identify students' skills of information literacy. Information literacy education, along with ICT skills education will be strengthened even more from 2003 onward.

Staff education is also a priority project. From 2001, in-service training is provided for approximately 33% of all teachers. Training is also provided for 10,000 professional instructors, one from each elementary and secondary school.

The Ministry of Education & Human Resources Development, each city and provincial Office of Education, and KERIS (the Korea Education & Research Information Service) are involved in the development and dissemination of education content. Beginning in 1988, the private sector has also become increasingly involved in the development of educational content. To promote development by the private sector, purchasing expenses of educational software are supported for each school.

## SINGAPORE

Singapore's first Master plan on ICT and Education was launched in 1997. In this plan, the underlying concern was to train students in skills such as the ability to think independently and creatively, to be competent and confident

problem-solvers, and to be life-long learners. As Information Technology was seen as a means of preparing students with such skills, the plan called for equipping schools and teachers with the necessary IT infrastructure.

mp2 is the Second Master plan on IT in education. mp2 adopts a systemic and holistic approach. The outcomes called for in mp2 are:

- Pupils use IT effectively for active learning
- Connections between curriculum, instruction and assessment are enhanced using IT
- Teachers use IT effectively for professional and personal growth
- Schools have the capacity and capability in using IT for school improvement
- There is active research in IT in education
- There is an infrastructure that supports widespread and effective use of IT

All the key pieces - curriculum, assessment, instruction, professional development, and culture of the school are integrated and addressed. For instance the Goals and Strategies for IT in Curriculum & Assessment are: 1) Integrate IT into content to create a dynamic and flexible curriculum; and 2) Leverage on IT to expand the scope and nature of assessment. Under Infrastructure and Support, the goals and Strategies are: 1) Provide dependable, flexible and safe network access; 2) Provide a multi-purpose, multi-functional, pervasive and ubiquitous IT-enriched environment; and 3) Provide IT support services

The approach calls for the involvement of the major stakeholders in education and emphasizes that they work together to tap the potential of IT.

## MALAYSIA

Malaysia's National Philosophy of Education calls for "developing the potential of individuals in a holistic and integrated manner, so as to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious."

The Ministry of Education sees ICT as a tool to revolutionize learning, to produce richer curricula, enhanced pedagogies, more effective organizational structures in schools, stronger links between schools and society and the empowerment of learners. The concept of ICT in education, as seen by the Ministry of Education, includes three main policies for ICT in education:

- ICT for all students, meaning that ICT is used as an enabler to reduce the digital gap between the schools
- The role and function of ICT in education as a teaching and learning tool, as part of a subject, and as a subject by itself
- Using ICT to increase productivity, efficiency and effectiveness of the management system.

In order to support the country's ICT master plan and fulfill Vision 2020, the education system is in the process of being transformed, to create a new generation of more creative and innovative Malaysians who are adept with new technologies and able to access and manage the information explosion. ICT-enabled Smart Schools act as a catalyst within this process. The first phase of implementation began in 1999 with 90 schools. These constitute the pilots, a sampling of the array of schools in Malaysia. Broad deployment to the remaining schools started from January 2000 using a phased approach for more details).

Smart Schools are not only characterized by the introduction of technology but by their ability to deliver education in a better way. The Government envisages that all schools will be converted into Smart Schools by the year 2010.

## PHILIPPINES

The Philippines' Department of Education (DepEd) initiatives on the use of ICT in education were embedded in the *DepEd Modernization Program*. Begun in 1996, it involved the introduction and use of modern technology to improve the teaching and learning process, educational management and support operations in the educational system.

Other initiatives were also undertaken by the Department to introduce ICT in education, including: The Development of Multi-Media Packages, Computer Education for Elementary Schools (CEDES), TV-Assisted Instruction and the Eskuela ng Bayan Project at the primary level; and, the 1999 & 2000 DECS Computerization Program, Continuing Studies Via Television (CONSTEL), the Sci-DaMath Competition (which integrates IT in its various activities which intends to increase the awareness of the learner and the public in Science and Mathematics), e-MAGE 2000 (Math Games for Excellence) and the PCs for Public Schools Project (PCPS) for the secondary level.

DepEd is also pursuing its Information and Communication Technology Plan. In this plan educational development shall form the core of the ICT programme, with principal focus on the quality of and access to basic education, empowering learners with life-long skills. In pursuit of this goal, the sector shall strive through the use of information and communication technology to achieve the following objectives by 2009:

- Provide the physical infrastructure and technical support necessary to make information and communication technology accessible and useful to students, teachers, administrators and support staff
- Develop competence in the use of the technology and in the design, production and use of ICT-based instructional materials
- Ensure access to the latest developments in ICT and to support research and development
- Undertake a curriculum improvement program focused on the integration of technology
- Promote the use of appropriate and innovative technologies in education and training

## SRI LANKA

The National Policy on Information Technology in School Education (NAPITSE) affirms the commitment of the government towards providing the state of the art knowledge in IT to Sri Lanka's younger generation, preparing them to face the challenges in the 21st Century.

The NAPITSE will have the following overarching goals:

- Create conditions enabling the effective use of IT as a tool in learning and teaching at all levels in the general school education
- Provide “information literacy” for all school leavers
- Create conditions for effective involvement of school system in lifelong education of citizens
- Create an information literate population of teachers and teacher educators

At the same time, Program 3 on HRD of the *eSri Lanka* strategic plan calls for the mainstreaming of ICT education at multiple levels of learning. ICT education will cover a wide spectrum covering training programs in the use of ICT tools in those disciplines with the greatest impact on the economy ranging to ICT literacy in primary and secondary schools. e-learning will be supported in priority disciplines and under-served areas. A specific target set in eSri Lanka is that at least 15% of all primary schools will be equipped with ICT labs in the next 3 years.

eSri Lanka will help ensure that teachers undergoing training learn computer-based pedagogy for primary and secondary education. Prerequisites are a robust training program for teachers and students and universities, as well as a basic and affordable connectivity. A fast track approach will be taken with respect to Connectivity and ICT usage in schools.

Increase intake of undergraduates for ICT based University courses to at least 1,000 per year. 100 University staff would be provided training at MSc level to be increased subsequently.

Use ICT as a fundamental enabler for the broadbasing of multi-layered as well as tertiary education across the country. This will be made possible through the use of e-learning infrastructures with maximised reach with respect to the number of educational institutions offering virtual education, as well as the breadth of curricula offered and the volume of students benefited from the initiative.

## INDIA

In November 2000 the National Curriculum Framework for School Education in India, providing guiding principles for reshaping the curriculum for schools, was released by the National Council for Educational Research and Training (NCERT).

Identified goals include the formulation of plans for the integration of computers into the curriculum, the creation of a framework for enhancing learning opportunities using ICTs across the curriculum, designing a flexible curricular model which would embrace inter-disciplinary and cross-disciplinary thinking and the development of attitudes that are value driven, rather than technology-driven.

Furthermore, it is deemed vital to the success of the implementation of ICTs to provide professional development opportunities for teachers, enabling them to act as facilitators of learning, helping the students to become their own teachers and to think for themselves.

Each state's interpretation of how these goals are best achieved, are as diverse as they are ambitious. While the establishment of new learning centres remains a constant nationwide, investment levels, the minimum age of mandatory computer education, connectivity and subjects specified for computer integration vary greatly.

## NEPAL

Nepal's IT master plan identifies the following necessary measures under the Action Plan for Human Resources Development:

1. Necessary facilities shall be provided to the universities in the country and graduate and postgraduate-level classes of international standard shall be offered in computer science and computer engineering subjects.
2. A long-term programme with a slogan "Computer education to all by 2010 AD" shall be formulated and computer education shall be offered as an optional subject in some public secondary schools and shall be made a compulsory subject in phases.
3. IT shall be used to improve the quality of education
4. Private sector shall be encouraged to prepare middle-level manpower required for the IT sector. Assistance shall be provided to the private sector to set up institutions for education, research and development in the field of IT in each development region.
5. Computer knowledge shall gradually be made compulsory to all newly-recruited teachers so as to introduce computer education in schools; and computer education shall also be provided to all in-service teachers in phases using various means including distance education.
6. Emphasis shall be given to provide computer education from the school level. Internet facility shall be made available free of cost to universities and public schools for four hours a day within the next five years (from 2000) to provide computer education in a systematic way.
7. His Majesty's Government shall provide scholarships to public and private sector technologists for higher study in IT.
8. Necessary scholarships shall be provided to poor and meritorious students from remote areas to pursue higher studies in IT.<sup>14</sup>

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<sup>14</sup> [www.npc.gov.np/it/it\\_policy.pdf](http://www.npc.gov.np/it/it_policy.pdf)

## VIETNAM

The Education master plan outlines the following objectives for the period 2001-2005:

- To build IT infrastructure for education and training. This consists of computer networks (local networks, intranets, Internet), computer rooms in schools, computers in all educational institutions linked together providing access to various databases and resources for teaching and learning activities and for educational management.
- To develop IT human resource for IT industry for reaching to 25000 or 30000 IT trained specialists at all levels of qualification. Specialised IT training programs for other disciplines are developed to promote IT applications to all different fields. Flexible training modes are encouraged.
- To use IT as an aided tool to teaching and learning for promoting innovative thinking, initiatives, communication, independent problem solving skills, information searching and processing skills to facilitate life-long learning for all people. To develop IT application to any subject, at any school, at any level through use of educational software (software for teaching, learning, testing and evaluation).
- To build suitable curricula, teaching methods and student evaluation systems for teachers' training program and to revamp educational management through student databases, teacher databases, databases for educational institutions as well as legal and regulation documents. This information system will make policy decision making faster and more efficient.

More specifically, Vietnam aims to develop a computers-based information network system for education called EduNet and to improve computer ratios at educational institutions: Every school should have at least one classroom with five computers.

Vietnam aims to strengthen training quality at all IT faculties, increase technical and practical works, regularly revise IT faculties and update their programs, set up more IT faculties at other state universities, increase the intake into two year training programs for technicians and technologists with more emphasis on practical skills, encourage second degree training in IT for graduates holding bachelor degrees in other disciplines, create a quality accreditation committee for reviewing programs at IT faculties and at other IT training levels, set up joint training programs with foreign universities, and to incite students, lecturers and researchers to study in developed countries.