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The Importance of National ICT Visions for Information Society in South East Asia

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Abstract

This paper addresses the question 'How necessary is a national information and communications technology (ICT) strategy/vision for the development of an information society?' For the purpose of this paper, 'information society' is reduced to two key dimensions: penetration of ICT, and access to government information on-line. In considering the question, the paper calls on data contained in the International Telecommunication Union's (ITU) case studies of e-readiness in eight South East Asian (SEA) nations (Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam). The background to the paper includes an overview of the SEA nations in terms of demographics and a discussion of the dilemma of government involvement in developing an information society in the light of the 'small government mantra' that has dominated in recent years. National ICT strategies visions of each nation are presented, followed by on overview of their information society policies and practices and their ICT penetration. The importance of the vision is then contrasted with other factors including level of development and national income. The conclusions draw attention to the importance of a vision irrespective of level of development and resource availability. In fact, for the least developed nations, poor infrastructure may be an opportunity to leap frog to the most advanced networks supporting an information society, if the vision is relevant, powerful and broadly held.

Keywords

Information society, Asia, national, policy

INTRODUCTION

Role of government

Governments around the globe have adopted 'the information super highway' as the infrastructure of the 21st Century, which will bring economic, social, democratic and environmental benefits. According to Firth and Kelly (2001) three levels of intervention strategies in the information and communications technology (ICT) market can be identified:

- 'Light touch regulation', where the principal role of government is to create the right environment for market development.
- 'Extended access strategies', where governments have identified specific geographical areas, or parts of the community, which may not be among the first to be served by the free market, and are pushing a strategy of outreach or subsidised access.
- 'Comprehensive national plans', where governments elaborate a master plan for the uptake, use and development of ICT. This involves bringing together many different actors, such as ministries, infrastructure providers, service providers and user groups.

A national vision may be associated with any of these levels. With 'light touch regulation', the vision may, for example, be a fully competitive market place in which ICT is but one sector. With 'extended access strategies', the vision may be of a society in which access and equity are universal, with ICT seen to be an essential tool. With 'comprehensive national plans', the focus may be directly on ICT, perhaps in conjunction with a broader national agenda, with the vision of being, for example, a regional leader in broadband access, as part of a broader agenda of attracting industry and jobs.

For nations that adopted the 'small government at all costs' mantra of the 1980s and 1990s, the pursuit of a national ICT vision presents something of a dilemma. At issue is the question: can the market ensure equitable access to the information society with time lines that are acceptable to the government, and in ways that are acceptable to society? Nations such as Canada and Australia that have committed to mandated or government-sponsored access for remote locations apparently believe that the market cannot be relied upon.

The advent of the information society makes the ICT vision doubly important as citizens seek access to government information. The role of the government may be central in ensuring not only physical access to relevant equipment and infrastructure, but also in ensuring that the information is accessible in terms of language (including script), literacy, political/social sensitivity, and timeliness.

This paper investigates the national ICT strategy/vision of each of 8 SEA nations and its relevance for the information society. Data contained in 8 ITU case studies are analysed. However, it must be stressed that the opinions expressed herein do not necessarily represent those of the ITU, the nations concerned, nor the original research team.

Firstly, the background to the ITU's case study programme, on which this paper is based, is presented. This is followed by a brief background to each of the nations covered. An overview of each nation's ICT vision is presented. The information society in each nation is then described in terms of ICT penetration and government information on line. The final section discusses the importance of the quality of that information in terms of transparency and veracity.

The ITU case study programme

In 2000, the International Telecommunication Union (ITU) embarked on a series of case studies of e-readiness among the nations of South East Asia (SEA). These studies were undertaken at the request of the nations, which appreciate the opportunity to have an impartial, external group of experts analyse and make recommendations on their ICT policies, programmes and projects. For some less developed countries, this may be their only opportunity to have independent data collected and collated. The case studies are more broadly valued as providing a systematic approach that may facilitate the comparison of the nations' e-readiness. These case studies can be viewed at http://www.itu.int/ITU-D/ict/cs/. The United Nations Development Programme's Human Development Index (HDI) is referred to several times in this paper. The HDI is a function of wealth, health, and education. Nations are ranked out of 174: the most developed being 1 and the least 174.

Eight SEA nations

The nations of SEA vary greatly in terms of culture, language (including script), economic system and level of development. In fact, it may be reasonable to say that there is no comparable area on earth with such a wealth of contrasts.

The most developed nation in SEA is the island of Singapore with its 3 million citizens enjoying an average GDP of USD20,767 ppp (purchasing power parity), placing it eighth in the world. However, as shown in Table 1, Singapore ranks only 24th in the world in terms of the United Nations Development Programme's Human Development Index (HDI)[1] – largely due to its relatively poor performance in education. The material on Singapore is drawn from the case study by Minges, Ismail and Press (2001).

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[1] The HDI is a function of wealth, health, and education. The HDI is measured by the United Nations Development Programme. Nations are ranked out of 174: the most developed being 1 and the least 174.

Nation	Population (millions)	Land area (sq klms)	Average GDPppp (USD)	HDI rank	Languages
Cambodia	11.4	181,035	1,361	121	Khmer*
Indonesia	210	1,919,443	2,857	102	Behasu Indonesian
Lao PDR	5.2	236,800	1,471	131	Lao (53%), many others
Malaysia	23.3	330,000	8,209	56	Behasu Malay, Tamil, Chinese* English#
Philippines	76.5	298,170	3,805	70	Tagalog English#
Singapore	3	618	20,767	24	Behasu Malay, Cantonese*, English#
Thailand	60.6	513,115	6,132	66	Thai*
Vietnam	78	331,114	1,860	101	Vietnamese

* indicates non-roman script. The Vietnamese script is based on roman script with many tonal notations added. The script common to all Chinese languages is IP compatible, and key boards are available. The Thai and Khmer scripts are Sanskrit-based; they do not have articulated words and are not easily made IP compatible. Khmer, in particular, with up to 6 layers in various symbols, is particularly unsuited to keyboards.

# indicates English is widely used.

Table 1: Comparative background figures (source: the relevant ITU case study, based on The World Fact Book)

Malaysia, with its two sections – Peninsular Malaysia immediately to the north of Singapore and the East Malaysian states of Sabah and Sarawak across the South China Sea - is the second most developed nation in SEA. Malaysia's average GDP of USD8,209 (ppp) accords it developing nation status (ranked 42nd in the world). Malaysia also performs relatively poorly on the HDI (56th). The material on Malaysia was drawn from the case study by Minges, Gray and Firth (2002).

Further north along the Malay Peninsular is Thailand, the third most developed nation in our group of eight SEA nations. Thailand's 60.6 million people use a Sanskrit-based script that was not easy to make IP compatible. With an average economic growth rate of 8% 1976-1996, Thailand was considered something of a minor SEA miracle. This all came to an end in 1997 when the Asian financial crisis started when the Baht was subjected to speculative attacks. However, with the economy more diverse than other nations with comparable GDP (USD6,132 ppp), full recovery promises. The region's highest literacy rate aids the HDI (66th) while a low current school enrolment dampens it. The material on Thailand was drawn from the case study by Minges, Kelly and Gray (2002).

To the south west of Thailand, off the west coast of Malaysia, the 13,000 island Indonesian archipelago begins. Of Indonesia's 9.8 million square kilometers, only 19% is land (1.9 million sq kms). This is put into greater perspective by the fact that the disputed territory of Irian Jaya in the east (West Papua) has 22% of the total land and only 1% of the 210.5 million citizens. The Asian economic crisis and a decade of political instability and scandal have reduced the total GDP to little more than half of what it was in 1991. Indonesia's HDI rank (102nd) is consistent with its rank in terms of GDP (USD2,857 ppp). The material on Indonesia was drawn from the case study by Minges (2002).

SEA's other great archipelago, the Philippines with its 7,000 islands and 76 million citizens, has grown at a slower rate than the other countries in this study over the last 10 years largely due to political unrest and infighting, and the resultant poor governance. The Philippines prides itself on its education system, which ironically sees many citizens successfully competing for jobs abroad, leaving the country poorly resourced. The emphasis on education is one reason for their relatively good HDI (70th). The material on the Philippines was based on the case study by Minges, Gray, Firth and Kelly (2002).

Back on the mainland, the two poorest nations in this study are located – Vietnam, Cambodia and Laos. With its population of 78 million struggling on an average USD1,860 ppp, Vietnam is a very densely populated and impoverished nation. Its HDI rank (101st) is higher than that of the much wealthier Indonesia due Vietnam's focus on education. The material on Vietnam was drawn from the case study by Minges and Kelly (2002)

Cambodia with its 11.4 million citizens has a war-torn recent history. It is one of the poorest countries on earth (USD1,361 ppp). Its HDI rank (121st of 174 nations) is higher than might be expected given its war-torn background, and lack of educational and health infrastructure. The material on Cambodia was drawn from the case study by Minges, Gray and Firth (2002).

To the north of Cambodia, and the west of Vietnam is South East Asia's only landlocked country: Laos. With its 5.2 million people and economy relying on subsistence agriculture, the sale of hydroelectricity to Thailand and foreign aid (38% of Government budget in 1999), Laos is classified as a least developed nation by the UN (USD1,471 ppp). Laos is ranked 131st in terms of its HDI largely due to its low literacy rate (47.3%). With 94% of its population below 29 years of age, Laos is one of the youngest in the world. This makes its low literacy rate a long-term cause for concern. The material on Lao was drawn from the case study by Minges and Gray (2002).

NATIONAL ICT STRATEGY/ VISION

Of the eight nations included in this study, two stand out as leading the world in terms of national ICT vision and strategy: Malaysia and Singapore. Three of the other nations (Indonesia, Philippines and Thailand) have recognized the importance of ICT and may have announced a vision, but have not developed that vision as a ubiquitous and integrated whole. The remaining three (Cambodia, Laos and Vietnam), while recognizing the use of ICT, have not developed visions. Therefore, this section and the one that follows (e-government in each nation) deal with these three groups of nations. Malaysia and Singapore are dealt with first in order to establish a benchmark.

Malaysia and Singapore

Singapore is a nation of 'high tech' efficiency with a commercial focus, and a society accessing all the benefits of advancement. It has few pockets of poverty, and has the regional headquarters for many international tech companies. Singapore's commitment to technological excellence is manifested in its vision of becoming an e-business society through its IT2000 plan. IT2000 calls for the construction of a broadband infrastructure, common network services (directories, security, authentication and billing), experiments with applications, forging international strategic alliances in Japan, the US and Europe, and establishing a policy and legal framework on issues like data protection, privacy copyright and intellectual property rights, and the admissibility of computer-imaged documents in court. This plan is supported by government investment in and subsidies of technologies and venture.

While both Malaysia and Singapore have national ICT strategies that constitute 'Comprehensive national plans', the difference between the two plans, while reflecting the nations' geographies and levels of development, is largely qualitative. The passion with which Malaysia approaches ICT contrasts with Singapore's somewhat cool stance.

Malaysia, with its mountainous terrain and pockets of remote traditional villages, both on the peninsular and in the Eastern States, has not only a formidable digital divide, but also few resources with which to address it. In response to this, and in line with the national vision of attaining developed nation status by 2020, Malaysia has developed a raft of programs and projects that are resourceful and tailored equally to Malaysia's social and economic aspirations. For instance, because the protection of the national character is given a high priority in the vision, the government works cooperatively with industry in both the control of imported content and the production of domestic content. A major component of Vision 2020 has been the establishment of a 50km by 15km 'high tech' broadband corridor connecting Kuala Lumpur International Airport with down town Kuala Lumpur (the Multimedia Super Corridor) to attract major international companies. Central to this has been the establishment

of a converged regulator, a systematic review of legislation to ensure technological neutrality throughout, and a comprehensive approach to e-government. The passion with which Malaysia approaches all things to do with advanced ICT is exciting and possibly unique in the world.

Indonesia, Philippines and Thailand

These three nations are in the middle of our 8 nations in terms of development and GDP per person. Indonesia and the Philippines have in common recent and on-going political strife and scandals involving government members and affiliates and ICT. The Philippine's battle with corrupt and poorly managed regimes culminated with the resignation of President Estrada and the appointment of President Gloria Aroyo in January 2001. The central administration's battle with independence insurgents in the south continues, and seems to be widening. In the face of this strife, it may not seem surprising that ICT has not been a central focus. Even though the Philippines was an early mover with an e-vision under then Executive Secretary Alejandro Melchor in the 1970s, its focused waned due to the lack of a 'local hero'. Recently, efforts have been made to create an international impression that the Philippines, as the world's 3rd largest English speaking nation, with its IT diasporas of some 100,000, and with 30,000 IT graduates per year, is the ideal Asian IT hub. The likelihood of success of such efforts has been given a boost by President Aroyo's interest in IT and his belief that it presents a path to development and amelioration of poverty. The status of ITECC, the body charged with executing the nations IT plans, for instance, was elevated when the President became Chair of its central committee. Other leading players seem somewhat jaded. While acknowledging the enthusiasm of President Aroyo, they tend to place it in the context of a series of presidential enthusiasms that they have supported over the years and have seen subsequently 'parked' after in-fighting, under-funding and national scandals.

In summary, the Philippines has no ICT vision comparable to those of Singapore and Malaysia. Rather, it may be better described as an 'extended access' approach in that it is seeking to provide ICT to the south and other impoverished areas. The Electronic Commerce Act (due for passage June 2002) sets out a framework for e-commerce and e-government including a funding base for e-government to be provided in the annual budget. While the Act is a start, without a clear review of national policies, laws and administrative behaviours, the Philippines cannot be said to be providing the 'light touch regulation' that many developed countries that otherwise lack an ICT vision (eg. USA and Australia) use to establish the environment for e-success. Another essential step toward 'light touch regulation' would be the elimination of graft and corruption in government practices. Efforts towards transparency inlcuding the electronic publication of all material related to the Public Tender Board by the Department of Budget and Management are supported by private e-whistleblowing sites such as www.tag.org.ph.

Indonesia, its recent and ongoing turmoil notwithstanding, has a poorly developed, *ad hoc* approach to ICT. While the appointment of President Megawati Sukarno Putri in 2001 brought an end to much of the political infighting and instability, there has not been a strong local push for ICT advancement other than through the private development of tech parks to attract industry. The World Bank and the IMF are pushing for a 'light touch to regulation' that will establish an environment in which investment can flourish. Indonesia has a history of unfunded plans, which may have jaded some of the key players. While a detailed 5 year Presidential Decree provides timetables for policy and legal framework, human resources, infrastructure and applications, there is no indication of where the funds and other resources are to be sourced. Indonesia stands out as not even having national plans for IT parks. Those that exist or are planned are private initiatives.

Thailand, rather than having an integrated ICT vision has a history of piecemeal projects. The 8th national Economic and Social Development Plan (1997-2001) sets out a plan to make Thailand a regional e-centre by: liberalizing telecommunications; providing equal access to regional centres; developing e-health and e-education, improving the postal service; joint government and private support of R&D and human resource development; establishing a neutral party to monitor and investigate ICT services; and amending legislation to open ICT to private investment. These plans were poorly supported by

projects, programmes and funding – especially after the financial crisis. Thailand's plan is to become a 'light touch regulation' regime rather than to use the ICT for broader national agendas. The establishment of the National Telecommunications Commission, as planned in 1997, has been delayed due to infighting over board membership and due to a lack of parliamentary time to pass the legislation. This delay may be scandalous given that the interim arrangements benefit existing companies, and the Prime Minister's (Thaksin Shinawatra) family is the major share holder in the largest telecom company in Thailand (Shinawatra).

Cambodia, Laos and Vietnam

Neither Cambodia nor Vietnam has a publicly stated ICT vision. Both have serious problems with infrastructure and poverty in their cities as well as rurally. These problems may be aggravated by a lack of constructive policy as well as a chronic and severe shortage of human resources. Both countries have large Diasporas. Cambodia has a policy of asking members of the Diaspora to return to help rebuild and modernize their homeland. The paucity of infrastructure could present as an opportunity to leap frog over intermediate, copper-based technologies to build very advanced air-interface networks.

Cambodia, in particularly, seems to be overwhelmed by the need to provide basic services (housing, health and education), for which it largely relies on foreign NGOs. The ICT industry has been seen as a 'cash cow' to provide licensing fees and concessions. The Prime Minister, Samdech Hun Sen, responded to the need for a plan when opening a seminar on Awareness of Information Technology in 2001. There, he enumerated six strategies; liberalise ICT in order to attract private investment in infrastructure; expand access to Internet through private investment; standardize Khmer script for computers; improve computer literacy through secondary and university curriculum development; participation in private sector IT projects for transfer of technology; and strengthen laws in intellectual property and computer crime. Details of how these are to be achieved or the source of funds have not been released. The National Information Communications Technology Development Authority (NIDA) with its staff of 40 is responsible to oversee these strategies and the plans of each department or ministry.

Laos does not have an ICT vision. In fact, Lao ICT administration appears to be in turmoil with in-fighting amongst ministries over responsibilities. Before a vision can be set, Laos will need to settle these rivalries, and reconcile the tensions between state planners, ministries, development assistance bodies and private investors. Lack of coordination appears to be the major obstacle to ICT development. In 1996, the Science, Technology and Environment Agency (STEA) was given the mandate to prepare Laos for the 21st Century. None of its plans were implemented, and there is not prospect of follow up. Because Vientiane is on the Thai border, many of the nation's most powerful individuals and groups choose to access Thai ICT.

Cambodia, Laos and Vietnam lack some of the most fundamental commercial laws on which to build e-laws. They therefore would struggle to achieve the 'light touch regulation' basis of an investment-friendly environment. Vietnam and Laos, in particular, appear to seek to maintain their legacy of non-transparent economic and social management. This in spite of Vietnam's Moi Doi policy push for modernization.

Of the eight SEA nations considered here, the ones with the least ICT vision, and the ones furthest from developing such a vision, are Laos and Vietnam. The Vietnamese government has been slow to take a role in ICT development – given the central role played by the government in the economic life of Vietnam this is doubly significant. There is no single ministry with responsibility for ICT, and no coordination of programmes and e-government projects. The funding of projects seems to be ad hoc and poorly accounted for by the government. In the case of Laos, it may be more that they do not have the institutional strengths to overcome their heritage rather than a conscious decision to retard ICT development.

INFORMATION SOCIETY IN EACH NATION

The term 'information society' is rarely defined, but generally is used in a positive frame to indicate the democratization of access to information. That is to say, it is used to convey images of access, equity and social efficiency rather than dark shadows of 'Big Brother'. Here, rather than defining information society, we simply refer to two commonly agreed upon attributes:

- ICT penetration;
- Access to government information on-line. This includes information about departments, government members, laws, decisions, actions, programmes, etc. It does not refer, here, to self-help information such as Singapore's 'ask a nurse' on-line.

ICT penetration in each nation

Malaysia and Singapore

Singapore's fixed telephone network has been fully digitized since 1994. The Singapore ONE (One Network for Everyone) backbone uses ATM technology over fibre optic cable at speeds of 622Mbps. As such, it is one of the most advanced networks in the world, and one of the ones best suited to broadband (Firth and Kelly, 2001). Nevertheless, in terms of ICT penetration (see Table 2), Singapore is ranked only 32nd in the world. This is largely due to low TV penetration rate (70th), for Internet host density it is ranked 15th. Free Internet access means that Singapore is one of the few countries in the world in which the number of Internet users is less than the number of subscribers, which in turn approximately equals the number of fixed phone subscribers. This Internet success, in terms of subscriptions, is attributed to free access and to the active support by government.

With almost 100% of homes having a fixed telephone and the Internet, and with 56% of the population having a mobile phone, the focus of universal service objectives is on awareness and interest rather than infrastructure and income issues.

Nation	Fixed phone per 100 people	Mobile phones per 100 people	Internet subscribers per 100 people	ICT access Rank*
Cambodia	0.25	1	0.02	171
Indonesia	3.1	1.7	1	128
Lao PDR	0.9	0.25	0.05	131
Malaysia	22	22	4	76
Philippines	4	8.4	2	117
Singapore	54	56	55	32
Thailand	9	5	1	94
Vietnam	3.2	1	0.1	160

*Rank out of 206 nations. ICT penetration indicators are telephone main line density per 100 inhabitants, TV set density per 100 inhabitants, Internet host density per 10,000 inhabitants and cellular mobile subscriber density per 100 inhabitants.

Table 2: Summary if ICT indicators (source: Firth and Kelly 2001)

Malaysia is 76th in the world in terms of ICT penetration indicators – due to a low TV density (111th), while it is 54th in terms of mobile density. Malaysia's backbone is fibre optic throughout much of the peninsular; Sabah and Sarawak are connected to the peninsular by satellite with fibre optic submarine backup. Therefore, although some communities in rural and remote areas of Malaysia have poor access to ICT, it is not generally for want of infrastructure. Rather, it is a matter of poverty, and a legacy of overall disadvantage. Electricity, (for example) is a precursor to PC operation: in Sabah only 75% of homes have electricity (Firth and Kelly 2001).

Malaysia's commitment to universal service while acknowledging the importance of access to data, has a priority of community access to telephony, private access to telephony, community access to Internet, and private access to Internet. Teledensity ranges from 36 in Selangor (near Kuala Lumpur) to 8 in Sabah. There is now at least one public phone in each of Malaysia 40,000 villages. Internet subscription penetration per 100 people ranges from 1.3 in Kelantan to 10.4 in Kuala Lumpur. The Malaysian government's great efforts to counter this digital divide are largely centred on community access, and on investing in skills and awareness of the next generation. Internet-ready, computer-fitted-out buses travel to remote areas of Peninsular Malaysia and similarly-equipped boats ply the rivers of the Eastern States providing poor children and families access to Internet lessons and experience.

Thailand, Indonesia and the Philippines

Thailand, with its complex arrangements between public and private telecommunication companies, does not have a technologically advanced network. Thailand's ICT access is ranked 94th (telephone density is 115th, TV density is 86th). Thailand's digital divide can be understood geographically. With only 1/3 of the population, Thai metropolitan centres account for over 90% of the internet users. More than 20% of Internet users access the Internet via cybercafes. Increasingly, access to a mobile telephone is being considered the benchmark for universal service. The number of public pay phones trebled to 180,000 in the period 1996 to 2000. More conventional universal access initiatives are stymied by a lack of regulation. Plans to create a universal service fund, for example, are awaiting new legislation. It was planned that by the end of 2001, all of Thailand's 69,000 villages had a telephone, but this plan may have been postponed (again). There is no Thai script compatible GSM phone, so 'texting' (SMS) is not popular.

In terms of the components of its ICT access ranking (128th), Indonesia performs better on fixed telephone and TV penetration (118th) and relatively worse on Internet host and mobile telephone density (123rd). Indonesia is under pressure from both the IMF and the WTO to improve its ICT performance (IMF in terms of access and economic restructuring, WTO in terms of liberalization). Indonesia's infrastructure is not advanced, though it is likely that all areas can access at least satellite. The lack of penetration is largely due to poverty and poor governance, particularly in remote areas. With 90% of its households without a fixed line, and with 90% of the population practicing Islam (the world's largest Moslem population) most Indonesians live closer to a Mosque than they do to a public telephone. Public internet kiosk have proliferated (target of 500,000 by 2004). More than half of Indonesia's Internet users do so via these kiosks. The tourist island of Bali has 33 fixed lines per 100 people, Jakarta 23 fixed lines per 100 people. With 16% of the population illiterate, and many of the rest barely literate, no Microsoft Bahasu Indonesian spell checker and no online English/Behasu/English translator, Internet use is for the well educated. Most Indonesians simply have no idea of what the Internet can do for them, or what they can do with the Internet.

Philippines has a comparatively poor ranking for ICT access (117th). The low ICT access rank is due to low fixed telephone density (140th), their mobile density is ranked 95th. There is a paradox with the low fixed penetration being associated with excess capacity. For various reasons including pricing (e.g. an historic lack of prepaid pricing) Filipinos do not connect to the fixed network even when it is available. Once again we see that access is no longer necessarily an issue of infrastructure. The preference for mobile ties in well with the national mania for short system messaging (SMS). The Philippines leads the world in volume and per subscriber SMS and in the business concepts developed around this so-called fad. The Philippines has 3 national fibre optic backbones supported by satellite. It is one of the few nations where telecommunications have historically been in private hands.

With only 4 fixed lines per 100 people and a large metro/region disparity, the Philippines is a long way from achieving universal service – or even universal access. Distribution of fixed lines ranges from 14.2 per 100 inhabitants in the National Capital Region NCR, to 0.4 per 100 inhabitants in the Autonomous Region of Muslim Mindanao (ARMM). In an attempt to ameliorate this disparity, the government introduced Executive Order 109 that mandates that mobile phone companies must install a certain number of fixed lines. While that requirement

has been met, only 44% of this extra capacity is used (i.e. subscribed). This ranges from as low as 13% for one mobile company's fixed line installations (Smart) to 56% (Digitel).

Cambodia, Laos and Vietnam

Unfortunately, Vietnam's lack of focus on ICT manifests as a poor rank in ICT access (106th). While this indicates that Vietnam lags behind the world in terms of mobile telephony, the focus on a fixed network has paid off with the liberalization of voice over Internet Protocol (VoIP), in which Vietnam and China lead the world. The fact that Vietnam only permanently connected to the Internet in 1997, is reflected in its rank in Internet hosts (181st). Internet use is still strongly regulated, although the Government states an interest in its growth. It appears that while the Doi Moi policy of liberalization extends to much of the economy it does not extend to electronic communication with the rest of the world. There is no subsidized Internet for institutions and no policy of stimulating public Internet access – however 20 rural communities have been connected to Free Internet by the Government. Approximately 85% of Vietnamese villages have telephone lines. The plan is to achieve 100% in 2005. In 1996 (last data available), Vietnam had 1,000 public pay phones. There is no geographic coverable obligation for mobile telephone companies. There are few government policies to encourage Internet use in schools, government departments, etc. Without a concrete plan, the objective of having an Internet penetration equal to the average for LDCs by 2010, is unlikely to be reached.

Cambodia's ICT infrastructure is in a parlous state with only 23,000 fixed lines. Its ICT access is ranked 171st due to poor fixed access; mobile access is ranked 129th. The low level of fixed penetration partly explains why Cambodia was the first nation in the world in which the number of mobile phones exceeded fixed (1993). The lack of emphasis on fixed infrastructure makes the move to an e-economy difficult except where fixed wireless is available. Currently, one in five fixed lines has an Internet connection, suggesting a high rate of penetration for a well-connected clique, and huge barriers to broader penetration. With 1 fixed line to 400 people nationally, Phnom Penh has 60 times the regional average (1 to 44 homes compared to regional 1 to 2,500 people). Such figures do not capture access as a peculiarity of the Khmer mobile market is that there are hundreds of micro-businesses set up in Phnom Penh and regional centres that present as a stall with a mobile phone for use by customers. This 'piggy backs' on the interconnection regime in which it costs a lot more to call a phone that is not with the same telco. So, even those who have their own phone might use a street phone to make calls to subscribers to other telcos. The up shot is that mobile telephony is making a larger contribution to universal access than the numbers suggest. Similarly, the proliferation of cyber-cafés, often 'piggy backing' on international NGO-subsidized internet accounts, provide Internet access to the wealthier and better educated sectors of the community, who are still unlikely to be wealthy enough or well enough placed to have access to a computer at home or work. There is virtually no e-activity in Cambodia. For example, as late as July 2001 there was only one automatic banking machine in the country, and credit card facilities only existed in the international hotel chains and associated businesses. Emailing family members abroad at an NGO-run café is the extent of Internet experience for the few Khmer who have had any exposure. Cambodia has the lowest Internet penetration rate in SEA (4,000 subscribers), and the highest prices – perhaps in the world. A fibre optic backbone runs from the Thai border through Phnom Penh to the Vietnamese border, and is supported by satellite with 128kbps, domestically.

While Laos has an increase in teledensity from 0.17 in 1991 to 0.9 in 2001, more than half of Lao districts (84 of 142) do not have a fixed line service, and only half of the providences have mobile coverage. There are no plans for universal service or access to telecommunications at any level. There is discrepancy as to the backlog of customers waiting for service. Nevertheless, it appears that some 135,000 urban households could afford a telephone service, but only 33,500 are connected. Another 35,000 could afford ICT if the back bone and/or electricity were available. Laos has fewer public telephones than do most LDC. One explanation is the lack of coins and the greater cost of smart card technology – these are being installed at present. Another explanation is the close community connections that require the lending of phones – normally for a charge of Kip 2,000 per minute (25 US cents). Mobile telephones have not had the success that they have enjoyed in other parts of SEA. Lack of competition, mountainous terrain and poor rural

population are thought to be largely determinant of this. A late launch of pre-paid (2000) means that much of the pre-paid revolution awaits Laos. In September 2001, 21% of mobile subscriptions were pre-paid. Access to Thai services for those living in Vientiane and other locations presents a choice for many Laotians. Lao content for the Internet is practically non-existent, and the population is generally very poor and unaware of the internet. The government has been suspicious of the Internets potential to destabilize the country, and so was slow to introduce it. Laos' entry to ASEAN has been a boost to Internet use through its e-ASEAN initiative (www.e-aseantf.org). There are approximately 60 Internet cafés in Laos (45 in Vientiane) with 480 terminals in total.

Government information online

Malaysia and Singapore

Consistent with their ICT visions, both Malaysia and Singapore have taken extensive steps to make government information available on line to citizens and visitors. Singapore introduced the Civil Service Computerisation Program in 1981 in order to enhance the efficiency of its highly esteemed and well-paid public servants. Today, Singapore's government is one of the most computerized in the world. The public service intranet attracts 50 million hits each year. Relationships with suppliers are managed through GeBiz the government e-business portal. The e-citizen portal (www.ecitizen.gov.sg) provides access to a plethora of government services. These are arranged according to life events rather than departments or agencies. The set up is the road of life, a stop at the building called 'getting married', for example, provides access to all the necessary information including how much a licence costs. While each agency has its own web site, e-citizen is considered to by user-oriented rather than government-centric.

Malaysia's government on line efforts come under the umbrella of Malaysia's Administrative and Modernisation Planning Unit (MAMPU), which mandates that all agencies must have an e-government strategy. While use of computers may not be as wide spread as it is within the Singapore government, all agencies have a webpage and all offices (even in remote areas) have Internet connectivity. In line with Vision 2020, Malaysian government information on line is extensive, comprehensive and progressive. With no internationally available bench mark, Malaysia has had to developed most of its ideas and strategies from the ground up. With a disparate population of differing ethnic groups, urban/ rural interests, city/ remote interest, etc., all having to be satisfied, the task was daunting. The outcome is that Malaysia has one of the most complete and interactive government information system on line in the world.

Indonesia, Philippines and Thailand

Most Indonesian ministries have a web site though there is no central government portal. Few provinces have web pages, and experience has shown that efforts to introduce ICT fail if mayors and governors are not ICT aware. With ongoing budget difficulties, most departments are not planning to expand ICT dramatically. Of the 819 government agencies, only 12% having a WAN, suggesting that few are connected to their regional offices. Only 38% had websites. In order to implement the government's current plans to extend e-administration, it would need to spend to increase expenditure by 600% over the next three years.

In Thailand the focus on awareness at the top levels of government contrasts with the lack of awareness that plagues Indonesia, where as few as 10% of public servants are aware of ICT. A directory of government agencies on line can be found at http://www.nepo.go.th/index_thaigov.html. Many of these sites are in English as well, and some contain a lot of information. Others merely provide contact details. These sites seem to be the outcome of efforts by independent agencies. Government regulations on websites, and on e-applications for those websites are still awaited. All of Thailand's 92 provincial hospitals have Internet. All 9,000 of their district health centres have dial-up Internet access. There is a range of on-line information services. The Ministry of Public Health launched its first telehealth pilot in 1994. Before the financial crises 19 hospitals in remote locations had satellite connection, then the project ground to a halt. Nevertheless a distance learning program has been set up. Several doctors each day offer lectures from teaching hospitals in

Bangkok. The target audience is the staff at the regional hospitals and remote health centres.

In the Philippines, Executive Secretary Alejandro Melchor was a great champion of public service computerization in the 1960s and 1970s. The subsequent lack of a champion, lack of funds and administrative disasters has seen the Philippines fall behind more recently. Grandiose plans to get the government on line to the public or for administration are repeatedly under-funded and then shelved. Only 30% of the Philippines Dept of Health staff use computers, and they are mostly in the head office, even though the operations are very decentralized. The DoH webpage has information and indicates the few clinics that have a website. The GISP (Philippines Government on Line) was approved in June 2000. The official government portal is www.gov.ph. At December 2000, of the more than 400 government agencies, 232 had internet connection, 115 had their own web site. The websites range from static information about contacting the agency, to interactive sites accessing statistical records (for example). Other agencies enable forms to be downloaded for manual lodgement (e.g. Bureau of Internal Revenue). Leading the way is the Social Security System that is fully electronically enabled in its dealings with the public. The limitations are on the users side. They typically rely on 'sneaker net' i.e. download data onto a disk or CD and give it to a sneaker-wearing courier to run over to the office.

Cambodia, Laos and Vietnam

The use of computers within the Vietnamese government is limited. Some 12 departments have web sites, which tend to provide static information rather than being interactive. The Director General of Post and Telecommunications does not have a web site, but has LAN with dial-up links to regional centres. Government e-activities are not centrally co-ordinated, and there is no portal. While all Vietnamese universities have Internet and a web site, it is estimated that the 22,000,000 students nationally have only 5,000 email accounts. The most comprehensive site is that of the National Assembly (www.na.gov.vn), which provides information on the constitution, and on members' biographies. Feedback is not facilitated as there are no email addresses.

Of the more than 20 ministries in Cambodia, only 10 have a web presence, of which 4 use .gov.kh, another 2 use .com.kh. The sites are in English and provide static information that is intended to be read by foreigners rather than locals. Local authorities outside of Phnom Penh are not on-line, largely due to a lack of vision, and a lack of funds. The first sites to be interactive are expected to be those that collect data on motor vehicles and land in order to establish a database of taxable assets. Plans for greater information to be available to the citizens are much less developed.

There is no Lao government portal. The government is fighting to get back the top level domain .la from a Las Angeles-based business. Only one government agency has a web site. The exception is the Ministry of Commerce and Tourism (MoCT www.mekongcenter.com). While some agencies are planning to get a web site, there are no concrete plans to provide information on-line. Very few government workers have access to Internet; it is reserved for email by the top echelons.

Veracity and transparency of online information

This paper does not present an analysis of the veracity of the information on the sites and its implication for transparency of government. Nevertheless, the paper would not be complete without cautioning that these important issues may destroy the information society at its heart. A few things may be considered, as follows.

As mentioned, the information on the Cambodian government sites is in English and intended to be read by foreigners. The Cambodian government is a new institution that does not have experience of transparency and of divulging information to the public. The publication of information on line that is relevant to the local population is resisted. This may explain the lack of government enthusiasm for developing a standard IP compatible script. International donors agree that poor governance is the single biggest obstacle to social and economic progress in Cambodia.

Indonesia has a long history of censoring information, and now has a ravenous hunger for news. With 700 newspapers, and TV news channels broadcasting in Mandarin, English and Indonesian the question begs: "how transparent and true is this information?" No online whistleblower site was found, nor does there appear to be an informal alternative news source on line.

Malaysia has a long history of censorship of media and a requirement to publish pro-government material. The material available on government sites is monitored to ensure that the state line is presented and a positive view is presented of government decisions, actions and outcomes. Malayasiakini (Malaysiakini.com), an independent (though originally foreign funded) source of alternative information is said to be the most popular site in Malaysia with some 100,000 hits per day. Malaysiakini survives because the government has declared that it will never censor the Internet.

The Lao government's distrust of Internet is not only manifest in Laos delay in entering the information age, but also in the MoIC being given responsibility for blocking pornographic and politically-sensitive sites. Loa people are used to a lack of information from the government and from other sources. TV broadcasting started in 1993. TV and radio are heavily regulated, as is the printed press. The Laotian dailies have a combined print run of 15,000. The veracity of information provided by the government on a raft of matters may be regarded with suspicion, though it is not clear if the information is deliberately falsified or if the government simply lacks the resources to produce quality data. For example, the UNDP adult literacy figure of 47.3% (1999) diverges from the official figure of 60% (1995) climbing to 70% (2000).

Filipinos have jealously guarded their freedom of speech throughout the political instability in recent times. This, it may be said, has flown in the face of some fairly irregular government practices. Nevertheless, the veracity and transparency of government is questioned, and in the long run may be aided by on-line whistleblowers. An example of this is at www.tag.org.ph where first-rate investigative journalism is applied to issues large (e.g. President Estrada and Associates Monopolise Gambling) and small (e.g. Local Officials Profit from Garbage). There are at least 70 other such sites.

The Vietnamese government maintains a stranglehold over telecommunications. Vietnam is one of the few countries in the world with no competition and no effective separation of the service provider and regulator. What competition exists is due to various government agencies offer telecom services. In particular, the Army has a number of telecom licenses. All other media is also 100% owned and controlled by the Government.

CONCLUSION – VISION OR RESOURCES?

The above indicates that the more developed nations have the more developed information societies in terms of both ICT penetration and government information online. This may not be a surprise as national wealth and development tend to go hand-in-hand, each leading the other. Nor, is it a surprise to find that the countries with the vision:

    (a) Know where they are going
    (b) Know how to get there
    (c) Get there

What may be a surprise, and if so, a disappointment, is that all but the three least developed lack an ICT vision, and do not have plans to develop such a vision. Rather, there is a tendency for them to see ICT as a threat to government control, and as a possible source of national instability. The upshot is that they lack a clear national approach to exploiting the benefits of technologies that are central infrastructures for economic growth and social development. This means that, at the national level, they miss opportunities to build equity and access to ICT. Through that, they miss opportunities to provide access to government services and information. Moreover, this means that government administration continues to be paper-based, expensive in terms of human resources, and easily rendered non-transparent.

It is concluded here that an ICT vision, rather than a luxury affordable by the more developed nations of South East Asia, is an essential key to the social and economic

development of which the information society can be a cornerstone, and a much-prized outcome.

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