Association of Southeast Asian Nations

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Introduction

The Association of Southeast Asian Nations (ASEAN), which was established in August 1967, has grown in the past three decades from five members—Indonesia, Malaysia, Philippines, Singapore and Thailand—to include Brunei Darussalam, Vietnam, Lao PDR, Myanmar and Cambodia. ASEAN encompasses a vast region with a total population of about 530 million and a land area of 4.5 million square kilometres of archipelagic nations as well as countries located in Continental Asia. In 2005, ASEAN's combined gross domestic product (GDP) reached almost USD 700 billion while its total trade amounted to USD 850 billion.

ASEAN's foundational aim was to 'accelerate economic growth, social progress and cultural development' and 'promote regional peace and stability'. In particular, ASEAN leaders concurred on the importance of integrating their economies in order to remain competitive and to reduce poverty and socio-economic disparities within and among the member states.

Acknowledging the need to narrow the developmental divide among member countries, ASEAN leaders launched the Initiative for ASEAN Integration (IAI) in December 2000, which focuses on bridging the gap between the older and the newer members, in particular Cambodia, Laos, Myanmar and Vietnam (collectively known as CLMV). The IAI includes infrastructure development, human resource development, information and communication technology and promoting regional economic integration.

Moreover, in October 2003, ASEAN leaders reached an agreement to create an ASEAN Community by 2020. The plan, also known as the Bali Concorde II, is made up of three components: the ASEAN Security Community, the ASEAN Socio-Cultural Community and the ASEAN Economic Community (AEC). At present, the establishment of an ASEAN Economic Community (AEC) is spearheading ASEAN regional integration. The AEC is envisioned to create a single market and production base characterized by a free flow of goods, services, investment, capital and skilled labour by 2020.[1]

There is a consensus within ASEAN that information and communication technologies (ICTs) have a significant role to play in efforts to realize the goal of regional economic integration and the vision of an ASEAN Community. This chapter reviews the efforts of ASEAN as a regional body in enhancing the region's ICT capacity and utilization. First, the chapter considers the key institutions in ASEAN that deal with ICTs. Next, key ASEAN ICT policy statements and programmes are reviewed, with emphasis on initiatives under the Vientiane Action Plan 2004 until the present.[2] The article then examines ASEAN's digital content, online services, as well as initiatives and programmes in education and capacity building, open source and research and development. The chapter concludes with the issues and challenges faced by ASEAN in utilizing ICTs to better the lives of its citizens and to foster the spirit of ASEAN community.

Key ICT Institutions

This section reviews the institutional mechanisms and bodies within ASEAN that are in charge of ICT policies and their implementation.

Telecommunications and IT Ministers' Meeting (TELMIN)[3]

In recognition of the increasingly important role of ICTs and the challenges and opportunities they offer, ASEAN established the Telecommunications and IT Ministers' Meeting (TELMIN) in 2001. Its aim is to strengthen and institutionalize regional cooperation on telecommunications and ICT issues. Before the creation of the TELMIN, the ASEAN Economic Ministers Meeting (AEM) was in charge of telecommunications and IT matters, along with a long list of economic issues.

The TELMIN meets annually. Some of the meetings are sessions with ASEAN Dialogue partners, such as China, Japan and Korea, as well as India and the European Union.[4] Following ASEAN custom, the TELMIN chair is rotated annually among all members, with the incoming chair hosting the next annual meeting. In its policy planning for the ICT sector, the TELMIN engages telecommunications and ICT industry players, especially through the e-ASEAN Business Council which is composed of private sector representatives from all of the ASEAN member countries. In addition, since its third meeting in 2003, the TELMIN has included a session in its meetings to engage ASEAN youth, seeking their views and discussing their thoughts on how ICTs affect their lives and the future of ASEAN.

At its 6th Meeting, held in Brunei on 18–19 September 2006, the TELMIN reviewed the progress and achievements in the implementation of the ASEAN ICT Focus 2005–10, the 2005 Hanoi ICT Action Agenda, and in particular the e-ASEAN Integration Roadmap and the Vientiane Action Programme's (VAP) telecommunications and IT action agenda. They discussed common issues in the creation of a conducive, competitive and sustainable ICT environment, digital content development, network security and important initiatives for strengthening human and institutional capacities in the ASEAN ICT sector. They highlighted the importance of building capacity in areas such as ICT literacy, full integration of ICTs in education and training at all levels, and creation of a critical mass of qualified and skilled ICT professionals and experts. The Ministers stressed that enhancing ASEAN's competitiveness in these areas is crucial in ensuring its relevance in the borderless world.

The Ministers announced that the ASEAN ICT Fund, created to finance priority ICT projects, is now in place. The Fund consists of contributions from ASEAN member countries as well as commitments from ASEAN Dialogue partners Japan, China, India and Korea. The Ministers agreed that the Fund will finance priority initiatives in the implementation of the Brunei Action Plan in 2007, in particular the development of ICT masterplans in CLMV, and capacity building, including: (a)

training for home workers in ASEAN countries, (b) workshops on public domain and content development, (c) e-learning, e-culture and e-heritage training for ASEAN youth, and (d) ASEAN ICT skills standard development (Sonia 2006).

In addition, the 6th TELMIN endorsed the creation in 2007 of an ASEAN ICT Centre (AICTC) to strengthen management and coordination mechanisms in the implementation of ASEAN ICT Focus and Work Programmes. The Centre's Programme Director and the two Deputy Directors will be seconded from Malaysia, and Indonesia and Vietnam, respectively. The Ministers also welcomed the regular dialogues and collaborative projects with dialogue partners (China, the European Union, India, Japan and Korea) and key international organizations like the International Telecommunication Union (ITU) and the Asia-Pacific Telecommunity (APT). The Ministers said they look forward to the implementation of the cooperation work plans with China, Korea and Japan namely, the Plan of Action to Implement the Beijing Declaration on ASEAN-China ICT Cooperative Partnership for Common Development, ICT Co-operation for Co-Prosperity in East Asia 2007–11, and Japan's Asia Broadband Programme: ICT Cooperation with ASEAN. An ASEAN-India ICT Ministerial and Industry Forum is also being organized for 2007.

Finally, the Ministers agreed to revitalize the e-ASEAN Youth Forum and the e-ASEAN Business Council by ensuring that activities and priorities are relevant to and supportive of the ASEAN ICT Focus/Work Programmes.

Telecommunications & IT Senior Officials' Meeting (TELSOM)

The ASEAN Telecommunications & IT Senior Officials' Meeting (TELSOM) was created to serve as the coordinating arm of the TELMIN. Specifically, TELSOM's mandate is to 'supervise, co-ordinate and implement policies, programmes and activities for telecommunications and Information Technology cooperation in ASEAN, in line with the directions and priorities set by TELMIN'. To facilitate coordination, the TELMIN country chair also chairs TELSOM.

The impetus to create TELSOM grew out of a May 2000 meeting among APEC Ministers of Communication and Information Technology where the need to create a regional platform for dealing with ICT issues was raised. Thus, in October 2000, the first ASEAN TELSOM meeting was convened in Brunei. TELSOM is composed of senior telecommunications officials designated by each of the 10 ASEAN member countries. They meet at least once a year and special meetings are held from time to time upon the TELMIN's request or direction. TELSOM works with the ASEAN Telecommunications Regulators'

Council (ATRC), the e-ASEAN Business Council and ASEAN's Dialogue Partners, in particular to:

- identify, implement and monitor cooperation programmes and activities to meet the telecommunications and IT requirements of the ASEAN region;
- serve as a forum for information exchange, discussion and consultation on major regional or international issues and developments in telecommunications and IT that are of common interest to Member Countries;
- provide the mechanism to promote participation of the private sector, regional/international organizations and non-governmental organizations in the development and implementation of its programmes and activities;
- establish, whenever necessary, working groups/expert groups to assist in the development and implementation of its cooperative programmes and activities;
- report its progress to the ASEAN TELMIN; and
- carry out other activities that may be mandated by the TELMIN and/or requested by other relevant ASEAN bodies.

In the First TELSOM Meeting in Brunei, TELMIN and TELSOM were designated as the key institutions responsible for the ICT aspects of ASEAN Vision 2020. Their tasks are articulated in the Hanoi Plan of Action as follows:

- To achieve interoperability and interconnectivity of National Information Infrastructures (NIIs) of Member States by 2010;
- To develop and implement an ASEAN Plan of Action on Regional Broadband Interconnectivity; and
- To intensify cooperation in ensuring seamless roaming of telecommunications services (that is, wireless communications) within the region, as well as in facilitating intra-ASEAN trade in telecommunications equipment and services.

Currently, TELSOM is composed of four working groups (WG) and chaired by a designated lead or shepherd country for two years. The chairmanship is rotated in alphabetical order among the shepherd countries. The WG which meet at least twice a year, are:

1. ASEAN Information Infrastructure (AII)—Convened in 2002, the AII Working Group (WG-All) was formed to facilitate the establishment of an ASEAN Information Infrastructure by enhancing the design and standards of the National Information Infrastructure (NII) of member countries and ensuring their interoperability and interconnectivity; to work

towards establishing high-speed direct connection between the NII with a view to transforming this interconnection into an ASEAN Information Infrastructure backbone; to facilitate the setting up of national and regional Internet exchanges and Internet gateways, including regional caching and mirroring; and to promote the security and integrity of ASEAN Information Infrastructure.

In line with its mandate, WG-AII has undertaken several initiatives such as the formation of national Computer Emergency Response Teams (CERT), guidelines for information sharing among CERTs, a convergence policy framework and an NII database.

2. e-Commerce and ICT Trade Facilitation (EC & ITF)—This WG is tasked to establish dialogue mechanisms and cooperative arrangements among ASEAN TELSOM administrations to discuss regulatory and policy issues pertaining to trade and investments in the telecommunications and IT sector and technological aspects of e-commerce. Its second task is to encourage and facilitate the adoption of e-commerce regulatory and legislative frameworks that will build confidence among consumers and facilitate the transformation of ASEAN businesses to become e-enabled. Third, it is to establish dialogue mechanisms with the private sector in ASEAN and with ASEAN Dialogue Partners on technological issues related to e-commerce and ICT trade facilitation.

Aside from formulating guidelines on e-commerce legal infrastructure in ASEAN member countries, the WG on EC and ITF has undertaken the creation of an ASEAN trade and investment policy and regulatory database. The WG is currently considering the following projects for implementation: interoperability of data exchange for ASEAN economic development (proposed by Thailand), setting up regional cooperation to curb e-mail spam, establishing an ASEAN e-Commerce Centre of Excellence where an exchange of experts in the field of training and legal framework is undertaken (proposed by Malaysia), and creating an ASEAN Frequent Traveller Card to facilitate the entry/exit of ASEAN nationals.

3. e-Society and ICT Capacity Building—This WG was created as a platform to develop an e-society in ASEAN and enhance capacity building by promoting awareness, general knowledge and appreciation of ICT, particularly the Internet. It is tasked to promote positive use of the Internet through seminars, workshops, common ASEAN guidelines and website development; and to recommend incentives and policy guidance in collaboration with the private sector for the development of local and ASEAN content and

other applications to maximize use of existing and planned infrastructures for ICT, as well as generate opportunities for business, livelihood and employment.

4. Universal Access, Digital Divide and e-Government[5]—This WG was created to enhance access, adoption and usage through universally accessible ICT networks and competitive and affordable ICT products and services, and to help reduce the digital divide among ASEAN member countries. It also aims to encourage and facilitate the provision of a wide range of government services online, facilitate linkages and/or consultations between the public and private sectors, and enhance inter-governmental cooperation by promoting electronic procurement of goods and services and by facilitating the freer flow of goods, information and people within ASEAN.

ASEAN Telecommunications Regulators' Council (ATRC)

The ATRC was established in 1995 at the height of revolutionary technological changes in the industry. Its aim is to facilitate the development of the telecommunications industry in the region in line with the establishment of an ASEAN Free Trade Area (AFTA).

In 2001, the ATRC formally became an adviser to the TELMIN. One of its tasks is to discuss and coordinate policy, as well as strategic and regulatory issues in telecommunications that are of mutual interest to the telecommunications administrations of ASEAN nations, such as radio frequency coordination, standards, regulatory trends and issues, strategies for telecommunications development and international affairs. It also aims to identify and promote areas of potential cooperation in telecommunications among ASEAN members and facilitate the exchange of information in these areas through seminars, training programmes and workshops.

The chairmanship of the ATRC rotates annually among its members. The following are the key activities undertaken by the ATRC:

• Harmonization of frequency spectrum allocation and use within the ASEAN region, such as satellite services, mobile cellular services and radio paging services to enhance mobility;

• Harmonization of technical compliance processes and standards for telecommunications equipment to support the effort of ASEAN manufacturers and suppliers to market their products in one another's market and to enhance the range and availability of this equipment for users. One concrete

output of this is the formulation of the ATRC Mutual Recognition Arrangement (MRA) for Telecommunications Equipment.

• Promotion of the development, interconnectivity and interoperability of the NII of ASEAN countries through harmonization of broadband multimedia networks standards; and

• Development of human resource expertise to support the growing needs of the region's telecommunication sector through the establishment of linkages among members to facilitate skills training and enhancement in telecommunications fields.

In 2006, the ATRC focused on network and cyber security, next-generation networks, radio frequency identification, and MRA for trade in telecom equipment. CERT Incident Drills were held in July 2006. The ATRC plans to expand the CERT Drills to include ASEAN's dialogue partners, test responses to simulated computer attacks and further strengthen cooperation among national CERTs. In 2007, the ATRC will focus on new initiatives in international mobile roaming charges, mobile number portability, prepaid SIM registration and information sharing on consumer protection, among others.

Enabling policies and programmes

This section reviews the ICT policy pronouncements and programmes of ASEAN that have been released since 2004.

Brunei Action Plan (BAP) 2006

The BAP, which was issued on 19 September 2006 after the Sixth TELMIN in Brunei, is ASEAN's newest ICT plan of action. It has four goals: (a) creating a conductive, competitive and sustainable ICT environment; (b) developing digital content; (c) ensuring network security; and (d) strengthening human and institutional capacities in the ASEAN ICT sector. It has eight points of action, as follows:

1. Build ASEAN ICT capacity by: (a) intensifying capacity building and training programmes to facilitate cross-border electronic transactions and the use of electronic signatures; (b) enhancing capacity building activities to support the development of the e-readiness and ICT master plans of ASEAN member countries by 2008; (c) pursuing the development of ASEAN professional ICT skills standards; (d) intensifying capacity building and training programmes for national CERTs; (e) supporting local content development to increase ICT usage at all levels of society; and (f) promoting the widespread use of ICT as a tool to

boost capacity building across all genders and segments of the society, including home workers.

2. Develop the ASEAN Information Infrastructure as the foundation for the sustainable development of an information society by: (a) strengthening the region's cyber-security network through expansion of the ASEAN CERT Incident Drills to include ASEAN's Dialogue Partners and (b) deepening policy and regulatory cooperation to deal with opportunities and challenges in the area of next-generation networks, including convergence issues and Voice over Internet Protocol (VoIP).

3. Achieve broader economic and social benefits through wider access to ICT by: (a) exploring open standards and open source technologies to increase ICT access and interoperability; (b) facilitating affordable universal access and connectivity through the use of new technology, such as wireless broadband, particularly for rural and remote communities; (c) promoting ASEAN-wide online services through the development of local and ASEAN content and the delivery of government, social and commercial services through the Internet; and (d) facilitating the development of ASEAN research and education networks.

4. Facilitate ICT trade and electronic commerce by addressing non-tariff barriers to trade and laying the policy and legal infrastructure for electronic commerce by: (a) welcoming increased participation in the ASEAN MRA on telecom equipment, (b) sharing best practices in implementing telecommunications competition policies, (c) fostering the preparation of domestic legislation to enable e-commerce transactions in all ASEAN member countries, (d) facilitating mutual recognition of digital signatures to enable cross-border transactions in ASEAN, and (e) establishing a networking forum among businesses in ASEAN and Dialogue Partners as a platform to promote trade and investment.

5. Exchange information on and harmonize, where it is appropriate, policies and regulations to increase ASEAN's ICT competitiveness—for example, the ATRC 2006–07 work plan, particularly in the areas of: (a) mobile number portability and international mobile roaming charges; (b) wireless broadband deployment, including in rural areas; and (c) prepaid SIM card registration.

6. Engage the private sector and the youth by: (a) strengthening cooperation with the e-ASEAN Business Council (e-ABC) through high-level strategic dialogues between ASEAN ICT communities and TELMIN, (b) encouraging e-ABC to play a leading role in promoting ASEAN as an attractive region for ICT investment, and (c) working with institutes of higher learning to establish a dedicated forum for ASEAN youth to address their ICT capacity building needs in areas

such as applications software development, digital content development and e-learning beginning 2007.

7. Forge links with strategic partners and key ICT international organizations to pool resources and expertise by: (a) deepening cooperative activities with Dialogue Partners, in particular China, the European Commission, India, Japan and Korea, in areas like broadband, RFID, content development, standards, Internet exchanges, emerging new technologies, telecom network security and ICT infrastructure; and (b) continuing engagement with international organizations like the ITU and APT through regular dialogues and collaborative projects particularly in the area of capacity building, especially in human resource development.

8. Strengthen institutional foundations to achieve the programmes elaborated above by: (a) ensuring effective and efficient utilization of the ASEAN ICT Fund for projects of mutual benefit to all ASEAN countries, (b) setting up the ASEAN ICT Centre (AICTC) by 31 March 2007 to manage and administer the ASEAN ICT Work Programme, and (c) encouraging the establishment of Centres of ICT Excellence in ASEAN member countries that could serve as test beds or proofs of concept for new ICT technologies, applications and services beginning 2007.

The BAP cites 11 ICT priority projects for implementation in 2007 under the four TELSOM Working Groups, namely:

- Engaging ASEAN Dialogue Partners in ASEAN CERT Incidence Drills (ACID II)
- Training workshop on Open Document Format (ODF)
- Capacity building on the establishment of CERT for Lao PDR and Cambodia
- ASEAN ICT e-mall to facilitate ICT trading
- Use of ICTs to empower home workers in ASEAN countries
- ASEAN workshop on public domain and content development
- e-Learning and e-Culture/e-Heritage for the Youth
- ASEAN ICT skills standards development
- Engagement of ASEAN Dialogue Partners in IPV6 capacity building initiatives
- Framework for a Research and Education Network (REN)
- Free/Libre and Open Source Software (FLOSS) distribution kiosks

ASEAN ICT Focus 2005–10

Issued in September 2005 during the Fifth TELMIN, this work plan is described as 'the overall guiding document in

the medium term, for concerted and collective cooperation in building the information society and in enhancing the region's connectivity and competitiveness' (Joint Media Statement of the Fifth TELMIN). The activities and projects included in the work plan are organized under the four main goals of (a) facilitating the establishment of a pervasive, interconnected and secure ASEAN Information Infrastructure; (b) facilitating the growth of electronic commerce and ICT trade in the ASEAN region; (c) developing an e-society in ASEAN and capacity building to reduce the digital divide within and among individual ASEAN members; and (d) striving for universal access to ICT infrastructure and services and creating digital opportunities and applications in the delivery of government services (e-government). Thus, the work plan integrates the goals and concrete action points contained in the e-ASEAN Framework Agreement, the Vientiane Action Programme 2004–2010, the Roadmap for Integration of the e-ASEAN Sector, and the terms of reference of the TELSOM Working Groups.

Hanoi Agenda on promoting online services and applications to realize e-ASEAN (2005)

This agreement, which was also released in September 2005 after the Fifth TELMIN, emphasizes cooperation in five areas: (1) enabling policy and regulatory environment for online services and applications, (2) interconnectivity and interoperability of ICT networks, (3) creation of digital content and online services, (4) improving network security, and (5) ICT capacity building initiatives focusing on the youth and the underprivileged. TELSOM and ATRC officials have been tasked to carry out the necessary measures to implement the Hanoi Agenda.

Roadmap for integration of e-ASEAN sector, 2004–10

ASEAN Leaders launched the Roadmap in November 2004 as the ICT component of the *ASEAN Framework Agreement for the Integration of Priority Sectors* in which ICT is identified as one of 11 key sectors. The Roadmap concretizes four objectives, namely: (a) to liberalize trade in ICT products, services and investments; (b) to develop, strengthen and enhance the competitiveness of the ICT sector in ASEAN; (c) to reduce the digital divide within individual ASEAN member states and among ASEAN member states; and (d) to promote cooperation between the public and private sectors in realizing e-ASEAN. The Roadmap contains specific measures such as the elimination of tariffs on about 683 ICT products;[6] elimination of non-tariff measures; establishment of rules of origin; improvement of customs procedures, standards and conformance; development

of integrated transport logistics services within ASEAN; outsourcing and industrial complementation; reduction of restrictive investment measures; and many more.[7]

Vientiane Action Programme (VAP) on telecommunications and the IT sector

The leaders of ASEAN issued the VAP in November 2004 as a guiding plan for the establishment of an ASEAN Community. The ASEAN Economic Community includes a strategy statement on key sectors, including telecommunications and IT. In the VAP, the leaders of ASEAN recognize the importance of leveraging ICTs via public–private sector partnerships and strong external linkages to build a connected, vibrant and secure ASEAN community by:

- Targeting universal access to ICT infrastructure and services;
- Encouraging the development of a pervasive, interconnected and secure ASEAN information infrastructure;
- Strengthening cooperation and assistance on regulatory policy and strategy issues;
- Creating digital opportunities through e-government, e-commerce and e-society initiatives;
- Enhancing the competitiveness and dynamism of the ASEAN ICT sector by promoting and facilitating trade and investment in ICT services; and
- Developing highly skilled ICT human resources.

Digital content, online services, capacity building, R&D and other ICT initiatives

The ASEAN Secretariat's website, www.ASEANsec.org, serves as the repository of information about the organization— its members, meetings and activities. The website also serves as an archive of ASEAN documents, declarations, papers and speeches. In addition, http://www.ASEANsec.org/99.htm provides a link to all ASEAN-related information and links.

In September 2003, ASEANconnect (http://www.ASEANconnect.gov.my/index.php) was set up to serve as the Association's ICT portal. ASEANconnect is an online database containing information and indicators on the telecommunications and IT industry in ASEAN as well as existing initiatives and programmes for bridging the digital divide and facilitating trade undertaken by the TELMIN, TELSOM and ATRC. The website was developed by the TELSOM WG on Universal Access and Digital Divide within ASEAN under Malaysia's leadership and

funding. However, the information on the website, especially the ICT indicators database, needs updating.

From 1999 to 2005, 36 e-ASEAN projects were recorded in ASEAN's Projects List by year and sector. These can be accessed at http://www.ASEANsec.org/14490.htm.

One of the most recent ICT projects in ASEAN is the ICT4D ASEAN Collaboratory (http://www.ict4dASEAN.org) (see boxed article below).

In line with the Association's efforts to bridge the developmental divide among its members, the Initiative for ASEAN Integration (IAI) was launched in 2000. ICT is identified as one of the four key areas for narrowing the developmental gap in ASEAN.[8] As of September 2006, 22 of the 132 IAI projects, including 14 that have been completed, are on ICT.[9]

In the 2005–06 period, the following activities and initiatives were undertaken by TELMIN:

- MRA for telecommunications equipment by Brunei, Indonesia, Malaysia and Singapore in 2004–05, and Malaysia-Indonesia and Malaysia-Brunei to be concluded in 2006.
- Harmonization of legal infrastructure for e-commerce in ASEAN, especially on issues such as e-transactions and e-signatures.

- ASEAN cyberlaw survey.
- ASEAN connect Web portal.
- Seminar on e-learning.
- 2nd ASEAN-China ICT Week.
- Cooperation with India on systems security, e-learning technology for the visually impaired, the tele-education and tele-medicine network, and the IT industry forum.
- Framework for cooperation on network security and its action plan especially on spam.
- ASEAN Chief Information Officers' Workshop.

Also in 2005, Malaysia offered an additional grant of up to USD 500,000 for 2006–08 to support the Smart Schools Project for CLMV. The Project aims to provide these countries with ICT facilities and a human resource development programme package.

With regard to research on telecommunications liberalization and harmonization of policies in the ASEAN region, the Australian Aid-funded Regional Economic Policy Support Facility (REPSF) has funded three studies: (a) ASEAN Telecommunications and IT Sectors—Towards Closer ASEAN Integration; (b) Regulatory Models for ASEAN Telecoms; and (c) Liberalization and Harmonization of ASEAN Telecommunications.[10]

The ICT4D ASEAN Collaboratory

The ICT4D ASEAN Collaboratory was established by the ASEAN Foundation in partnership and with funding support from Canada's International Development Research Centre (IDRC) to serve as: (a) a regional ICT incubator and training facility to cater to the needs of individuals and organizations in ASEAN countries, as well as Asian countries outside ASEAN; (b) an Internet-based technology bed to support experimentation and testing of ICT applications; and (c) a one-stop showcase of hard, soft and process technologies and tools used by progressive developing countries in ASEAN as well as Asian countries outside ASEAN, in support of their funded digital development programmes and projects.

The Collaboratory targets development practitioners in government and non-government institutions as well as ICT specialists and end-users of ICTs in the developing countries of Asia. It focuses on such themes as Women and ICTs, ICTs in Small and Medium-Scale Enterprises, and ICTs for Rural Communities. Customized and regularly scheduled ICT training courses for individuals and groups are conducted, such as face-to-face training or individualized hands-on training in Jakarta and distance-training courses and incubatory trials and pilots in e-commerce, database-building and website development. In the incubatory trials, learners are given step-by-step Web-based instructions on how to set up their applications and to practice in a closed site before going live with their applications on the ICT4D Collaboratory server to service their clientele.

The Collaboratory also offers Web hosting, video hosting and e-commerce (http://www.panASEANemall.org). The target for the next three years is to serve as a regional digital incubator and training facility in e-commerce, educational technologies, e-government, expert systems, geo-information system, bibliographic and textual database system, system-generated discussion and mailing list, electronic conferencing, multimedia applications and other Web-based technologies.

ICT education projects for CLMV

Under the Association's Initiative for ASEAN Integration (IAI) programme, older ASEAN members (also known as the ASEAN-6: Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand) have agreed to help the newer members, Cambodia, Laos, Myanmar and Vietnam (collectively known as CLMV) bridge the developmental gap through a series of projects focusing on four areas: infrastructure, human resources development, ICT and regional economic integration. Since the Association has limited financial resources to extend to its newer members, it has relied on funding from international financial institutions or developed countries to finance infrastructure projects. In areas where the ASEAN-6 feel that they are capable of helping the CLMV countries, domestic resources are mobilized to extend help. Two examples of ICT initiatives under the IAI are Malaysia's Smart Schools Project and ICT Certification Training for the CLMV countries.

The Malaysian government's Economic Planning Unit's Technical Cooperation Programme manages the Smart Schools Project, which aims to extend assistance in developing ICT competencies in CLMV. The first phase of the project was implemented in 2002–03 in three schools in Myanmar and two schools in Lao PDR. The Malaysian government has set aside USD 500,000 to fund the project's second phase from 2006 to 2008. The second phase will include the expansion and enhancement of the project in Myanmar and Lao PDR, and introduction of the Smart Schools initiative in Cambodia and Vietnam.

Moreover, since 2004, Malaysia has been offering CLMV participants ICT Certification Training covering basic, intermediate and advanced courses, such as computing and the evolution of networking, advanced computing and mobile satellite communications systems, network management and mastering technology in creating a digital environment. In addition, Malaysia is offering two scholarships to each of the CLMV countries for Postgraduate Research Studies in ICT at the Multimedia University of Malaysia.

Challenges

ASEAN as a regional body has been actively undertaking various cooperative actions to advance the region's utilization of ICTs toward regional integration and development. The Association has established key institutions that meet regularly to thresh out ideas and issues, and to develop and implement plans and programmes.

The creation of the ASEANconnect website as a repository of documents and information on the work of the TELMIN, TELSOM and ATRC, separate from the ASEAN Secretariat's website, is a commendable effort. However, the website needs to be maintained and regularly updated so that it can serve its function as the central portal for ICT information in the region.

Another laudable development is ASEAN's move to engage its dialogue partners in ICT-related cooperation. This is a step towards institutionalizing official mechanisms and dialogue for addressing ICT issues and challenges in a collaborative way.

Funding for pilot projects and for continuing good projects is perhaps the main challenge facing ASEAN. The ICT Fund is a concrete step forward. It is not enough, however. Bilateral and aid financing from international funding institutions, as well as support from developed countries, will continue to play an important role in developing ICT capabilities in the region, especially for CLMV.

Finally, as this review indicates, ASEAN is not lacking in policy agreements and initiatives to bridge the developmental divide and to ensure regional cooperation in ICT4D. Perhaps, rather than making a long list of projects, it is time for the Association to concentrate on a few key projects each year and to undertake a full assessment of each before moving on to other areas.

Notes

1. At the 11th ASEAN Leaders' Summit in December 2005, it was agreed to put forward the goal of realizing an ASEAN Economic Community by 2015.

2. Earlier ASEAN policy statements like the e-ASEAN Framework Agreement, e-ASEAN initiative, and the Hanoi Plan of Action were discussed in the *Digital Review of Asia Pacific 2005/2006* and will not be discussed here.

3. See www.ASEANconnect.gov.my/telmin/telmin.php

4. See for instance http://www.ASEANsec.org/18490.htm for a discussion of Euro-Southeast Asia Forum on Information and

Communication Technologies 2006 and http://www.ASEANsec.
org/18368.htm on the Joint Ministerial Statement: ASEAN-
China ICT Ministerial Forum on 26 April 2006 in Penang,
Malaysia.

5. See http://www.ASEANconnect.gov.my/telsom/wgUADDAbout.
php?groupId=4

6. For the complete list, see http://www.ASEANsec.org/
Roadmaps%20Annex/e-ASEAN.pdf

7. See http://www.ASEANsec.org/16690.htm

8. See http://www.aseansec.org/934.htm. Aside from ICTs, the other
three key areas identified in the Hanoi Declaration on Narrowing
the Development Gap for Closer ASEAN are: (a) integration of
infrastructure, particularly transportation and energy; (b) human
resource development, particularly the strengthening of training
institutes and programmes, English proficiency, skills for the
knowledge-based economy and the information age, and civil
service training; and (c) regional economic integration, with

emphasis on raising the capacity of the newer members to integrate
their economies to the regional economy.

9. See http://www.aseansec.org/iai_update.doc for the full report.

10. For a complete list of REPSF publications, see http://www.
ASEANsec.org/16945.htm

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