

Malaysia

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Overview

Malaysia comprises Peninsular Malaysia, and the East Malaysian states of Sabah and Sarawak, and the Federal Territory of Labuan. The country covers an area of about 330,000 square kilometres. Peninsular and East Malaysia are separated by about 450 kilometres of the South China Sea. The peninsula has its frontiers with Thailand in the north and the island state of Singapore in the south. The country attained political independence from the British in 1957. Its development policies have evolved during the past four decades, from the initial concentration on the agricultural sector to the current strategy of leapfrogging into the digital era.

The development of ICTs in Malaysia is often simply and erroneously equated by observers to the development of the Multimedia Super Corridor (MSC). This is quite understandable as MSC was, and still is, seen by many as the baby of the government's plans to digitalise the country. This error is also due in part to the launching of MSC in 1996 at about the same time that the government unveiled its plans to develop ICTs in Malaysia. However, a closer examination of Malaysia's ICT agenda and strategies will reveal that the push towards the digitalisation of Malaysian society began at least as far back as 1991 – 28 February 1991, to be exact. It was on this day that the Prime Minister, Dr Mahathir Mohamad, unveiled his Vision 2020 for Malaysia at the inaugural meeting of the Malaysian Business Council.

It would be no exaggeration to say that for more than a decade – and consuming virtually miles of newsreel and acres of newsprint – on Mahathir's "Vision" has firmly captured the imagination of the Malaysian media and public. And it is within the nine challenges set forth in the Vision that we can locate the initial motivations for digitalising Malaysia. One of the challenges is to establish "a scientific and progressive society . . . innovative and forward-looking" (Mahathir, 1991, pp. 2–4). It has been further argued in this regard that "The national IT agenda, aimed at transforming the nation into a knowledge-based society, [is] in line with Vision 2020" (Government of Malaysia, 2001, p. 367).

Despite the Asian meltdown of the late 1990s, the development of ICTs in Malaysia – at least the development of ICT strategies – has continued at what appears to be a rapid pace due largely to the importance attached by the Mahathir administration to the successful digitalisation of the country.

In 1994, the National IT Council (NITC) was established, chaired by Mahathir and made up primarily of government ministers and a smattering of top company executives, including the chairman of Shell Malaysia and the chief executive of Telekom Malaysia. NITC "aims to enhance the development and utilization of ICT as a strategic technology for national development . . . acts as a think-tank at the highest level and advises the government on matters pertaining to the development of ICT in Malaysia" (NITC, 2000, p. 1).

Later, in December 1996, the National IT Agenda (NITA) was launched by NITC. It is NITA that continues to provide the necessary guidelines for the development of ICTs in Malaysia. Indeed, what is evident is that it is the government, not the private sector, that is spearheading the digitalisation of the country. This, too, is hardly surprising, given the fact that since attaining political independence Malaysia's development policies and strategies have been top-down in nature, often without much consultation with the citizens before the implementation of these policies and strategies.

Be that as it may, with NITA at the helm, legal articles have been continually prepared for the digitalisation process and MSC were developed. The past six years have seen much being said, planned and proposed in relation to ICTs. From the inane *I Love IT* song on Malaysian television a while back to NITA's apparently more serious strategic task areas and the flagship applications of MSC, it is quite evident that ICTs are being taken very seriously by the powers that be.

Statistics indicate that as of June 2002 there were 2.3 million Internet subscribers in the country, with the number of users being almost 7 million. In comparison, in 1997, just five years earlier, the figures were a mere 0.2 million and 0.6 million, respectively. Equally, the number of cellular phone subscribers has jumped almost four fold, from 2.4 million in 1997 to 8 million in June 2002 <<http://www.cmc.gov.my/statisticframe.htm>>.

While the figures may seem impressive, there is a need to remind ourselves that similar official statistics indicate that the digital divide in Malaysia is still very real. For example, NITC figures for 2000 indicate that more than 70 percent of Internet subscribers are located in Kuala Lumpur and the states of Selangor, Penang and Johor, with the remaining ten states having less than 30 percent of total Internet subscribers (NITC, 2000). And it is also clear that

the bulk (60 percent) of ICT expenditure during the period 1996–2000 was in manufacturing (16.5 percent), banking and finance (15 percent), distribution (10.4 percent), telecommunications (9.3 percent) and government (8.3 percent) (Government of Malaysia, 2001). NITC calculations on affordability indicate that Internet usage for a typical rural household would constitute 88 percent of disposable income, a percentage which NITC concludes is a considerable amount (NITC, 2000).

Thus, it would seem that there is still quite a bit of work to be done if societal transformation is to come out of people-centred development via the involvement of all sectors of the society.

Content

Malaysia is a multi-ethnic, multi-religious society, often touted as the multi-ethnic society par excellence, although its record on ethnic relations may actually belie this assertion.

Be that as it may, within this multicultural milieu, the national language is Malay, while English, Chinese (Mandarin, Cantonese and Hokkien) and Tamil are also widely used. Malay is the language of instruction and the language of government, although there is presently a drive to “recapture” fluency of the English language and its usage among all Malaysians. This is being spearheaded by the Mahathir administration, it is argued, in order to enable Malaysia to be competitive in a globalised and borderless world.

In this regard, the development of local software is predominantly in English. As in other countries, much of the software industry in Malaysia is profit driven and, perhaps more so than in many other countries, piracy is a major drawback for software developers here. Hence, as has been cogently argued recently: “For a local software developer, the logic would be simple – produce in English and the risk of potential losses due to piracy is lightened, because the software can be sold to overseas markets, especially in areas where there is less piracy such as the United States and Western Europe, and which are also much larger markets” (*The Star*, Tech Plus Supplement, 18 July 2002, p. 5).

Hence, while there is currently some development of national language software, especially in the local open source arena and clearly driven by more than the idea of making money, “it is unlikely that the love for the language would be enough to spur more Malaysians to develop Bahasa Malaysia [national language] software” (ibid., p. 6).

Media industry

Ever since the beginning of the Mahathir administration more than two decades ago, in 1981, the Malaysian media scene has undergone considerable changes. Available studies (Zaharom, 1994; Wang, 2001) indicate that, while control over the media has certainly been tightened over this period

Malaysia facts

Total population: 24.5 million (2002)^a

Rural population as a percentage of total population: 39.1% (2001)^b

Key economic sectors: Services, manufacturing, agriculture, mining and construction (2001)^b

Literacy in the national language(s): 83.5% (2002)^b

Computer ownership per 100 inhabitants: 12.61 (2001)^b

Telephone lines per 100 inhabitants: 20.5 (2001)^b

Internet users per 10,000 inhabitants: 2,731 (2001)^b

Internet hosts per 10,000 inhabitants: 31.10 (2001)^b

Cell phone subscribers per 100 inhabitants: 32.8 (2002)^a

Sources:

- (a) <<http://www.cmc.gov.my/statisticframe.htm>>.
- (b) Government of Malaysia (2001). *Eighth Malaysia Plan 2001–2005*. Putra Jaya: EPU.
- (c) <<http://www.cia.gov/cia/publications/factbook/geos/my.html>>.
- (d) ITU (2002). *Asia-Pacific Telecommunication Indicators 2002*. Geneva.

with the introduction, for example, of the *Printing Presses and Publications Act 1984 (Amended 1987)*, ironically the number of local newspapers, magazines, journals and broadcast media has increased. What is also evident, on the other hand, is that there is a growing concentration of media ownership in the hands of a few players.

Print media

In the peninsula there are currently five newspapers in English (*The Star*, *New Straits Times*, *Malay Mail*, *The Sun and Edge*), four in Malay (*Utusan Malaysia*, *Berita Harian*, *Utusan Zaman* and *Harian Metro*), seven audited Chinese newspapers (*China Press*, *Guang Ming Daily News*, *Kwong Wah Yit Poh*, *Mun Sang Poh*, *Nanyang Siang Pau*, *New Life Post* and *Sin Chew Jit Poh*) and three in Tamil (*Malaysia Nanban*, *Makkai Osai* and *Tamil Nesan*). Latest figures indicate that the total daily circulation of these newspapers is more than three million, or approximately one newspaper for every eight individuals.

All four of the Malay newspapers mentioned above are produced by just two local media giants: the New Straits Times Press (NSTP), which publishes *Berita Harian* and *Harian Metro*; and Utusan Melayu (Malaysia) Sdn Bhd, which publishes *Utusan Melayu* and *Utusan Zaman*. NSTP

also publishes the English newspapers the *New Straits Times* and the *Malay Mail*. These companies, which hold interests in other media organisations, are themselves controlled by groups closely aligned with political parties in the ruling coalition.

Broadcast media

There are four free-to-air television stations in Malaysia, namely the two government stations, TV1 and TV2, and the two private stations, TV3 and NTV7. Television reaches 85 per cent of the population, with TV3 being the most widely watched station (*Media Guide 2001*). TV3 and the *New Straits Times* are presently owned and controlled by the same conglomerate, although a restructuring is pending.

The Ministry of Information, which operates TV1 and TV2, also operates 7 radio stations in the peninsula. A further 12 private radio stations providing mainly music, operate alongside these state-controlled stations (*Media Guide, 2001*). A satellite broadcasting company, All Asia Television and Radio Company (ASTRO), has been operating since 1996, now providing more than 25 television channels through subscription.

Internet newspapers

Increasing access to the Internet has opened up the possibility of operating Web-based newspapers and even radio. This potential was realised just before the 1999 general election, when *Malaysiakini* <<http://www.malaysiakini.com>> began providing its own brand of alternative local news. Set up as a project funded by a regional journalists' organisation, *Malaysiakini* is managed by former print journalists who had grown disenchanted with the local mainstream media and the constraints they were under. Although the organisation has grown – in terms of personnel as well as reach – such growth, predictably, has resulted in increasing operating costs. Not surprisingly, what started off as a free daily service is now provided mainly via paid subscription. Thus far, *Malaysiakini* has had its share of critics, mainly from the government. Its editors were summoned by the Parliamentary Secretary to the Information Ministry (who has now been promoted to Deputy Minister) during a particular period in 2001 when the website came under intense pressure from the government's broadcasting station TV1. Its journalists have not been given accreditation passes by the government, hence they find it extremely difficult, if not impossible, to attend official functions, to interview ministers and to report on government matters. Early in 2003, its office was raided by the Malaysian police and its computers confiscated pending investigation.

An array of "alternative" newspapers sprang up on the Internet during the Anwar Ibrahim episode from 1998 onwards. But most of these websites have since fallen by the wayside, principally because they were run on a voluntary basis and were focused on a very specific issue or individual, hence they faced problems of sustainability.

The main opposition political party, PAS, has a Web-based version of its official party newspaper, *Harakah*. The print version was evidently outselling the major mainstream newspapers leading up to the 1999 general election. But such popularity was short-lived because the government used its immense powers under the *Printing Presses and Publications Act* to reduce *Harakah's* frequency of publication from twice a week to just once every fortnight.

Important local sources of content

Malaysiakini.com <<http://www.malaysiakini.com.my>>

Malaysia's first totally Web-based newspaper was created in 1999, prior to the general election. This news site has won numerous international awards for independent reporting and has also been cautioned by those in power for its open style of reporting and its refusal to toe the line.

Star Online <<http://www.thestar.com.my>>

Voted the most popular Malaysian website in 2001, this online version of the top-selling English newspaper provides daily news from a mainstream perspective.

Aliran Online <<http://www.malaysia.net/aliran>>

Malaysia's premier social reform NGO dedicated to "justice, freedom and solidarity", Aliran has been around for more than two decades. It is listed on the roster of the Economic and Social Council of the United Nations. The website contains critical articles on issues in Malaysia and provides good links to other civil society groups in Malaysia and elsewhere.

Cari <<http://www.cari.com.my>>

One of the few Malaysian search engines, Cari (meaning "search") provides substantial – and pretty up-to-date – links to diverse topics, events and organisations in Malaysia. The user may use this search engine in either the national language or English.

Open source group <<http://www.my-opensource.org>>

This site provides insights into Malaysia's fledgling open source movement. It is useful for those wishing to understand what is at stake, more so in a Malaysian context.

National Information Technology Council

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

The essential website for anyone trying to understand the development of ICTs in Malaysia. This website outlines and explains fairly comprehensively the Malaysian government's ICT strategy, initiatives taken and planned.

Malaysian Institute of Microelectronic Systems (MIMOS)

<<http://www.mimos.com.my>>

MIMOS Berhad is an organisation that advises the Malaysian government on technologies, policies and strategies relating to the development of ICTs. Its model focuses on technology,

policy and business. Its website is full of very useful information and helpful links. Actively supporting open source, MIMOS recently launched the Asian Open Source Centre (<http://www.asiaosc.org/article_7.html>).

Multimedia Development Corporation

<<http://www.mdc.com.my>>

This is the website that provides all the information required about MSC.

Malaysian Communications and Multimedia

Commission <<http://www.cmc.gov.my>>

This commission oversees and regulates the development of ICTs in Malaysia. Going into this site enables one to get a feel of the environment within which ICTs are developing, the issues that need addressing and the steps being taken to resolve problems.

Maybank Berhad <<http://www.maybank2u.com.my>>

This website of Malaysia's largest bank was also voted one of the most popular in 2001. Its importance lies in the electronic banking services it provides and its ease of use by consumers.

MyETutor.com Sdn Bhd <<http://www.myetutor.com>>

This is an interactive portal created for making the learning process as fun and educational as possible and is aimed at children and adolescents from the age of 7 to 17. Although it covers all the subjects taught at school, it focuses on encouraging its members to actively develop their IQ, general knowledge, as well as their social skills (through outdoor activities).

Worldview Foundation (Malaysian Chapter)

<<http://www.wvview.com.my>>

Worldview Foundation, a non-profit, international NGO focuses on sustainable development. According to its website, in Malaysia it aims to "produce, acquire and distribute value-based television and video programmes to a young Asian audience. The infotainment and edutainment segments are marketed under the name of Young Asia Media (YA*Media), which is the first television network for and by the young population of Asia."

ICT industries and services

Software

A check at <<http://mscsoftware.com.my/products>> revealed a list of 128 MSC-status companies that are supposedly active in developing business application software. However, the actual number is considerably less since a few of the homepages provided could not be accessed. Among those which are accessible are the following:

MIMOS Berhad (Malaysia) <<http://www.mimos.my>>

The company aims to develop and apply leading edge technologies for value creation to spearhead national ICT development towards the fulfilment of Malaysia's Vision 2020 and also to connect and align research activities with market and social needs.

MRCB Multimedia Consortium Sdn Bhd (Malaysia)

<<http://www.mmcsb.com.my>>

This company designs, develops, implements and supports the Electronic Government Human Resource Management Information System Project.

Smartship Computer Sdn Bhd (Malaysia)

<<http://www.smartship.com.my>>

This company engages in the R&D of business software applications. It also provides consultancy, training and support services.

Databridge Business Solutions Sdn Bhd (Malaysia)

<<http://www.databridge.com.my>>

Databridge is involved in the development of mobile agent software for the insurance and unit trust industries as well as supply chain and management software for local small and medium enterprises.

Not surprisingly, the majority of the companies provide software solutions or services for banking, finance and manufacturing.

Hardware

Based on a search on the Internet, 40 MSC-status hardware companies are available. These include:

PTRG (Malaysia) Sdn. Bhd.

<<http://www.inettech.com.my>>

PTRG's activity is in acquiring, licensing and undertaking R&D on technologies and chip designs for security applications in the automotive, air transport and residential markets.

Iris Technologies (M) Sdn Bhd (Malaysia)

<<http://www.iris-card.com.my>>

This integrated smart card system developer is presently developing the 64 KB MyKad.

Trek Systems (M) Sdn Bhd (Malaysia/Singapore)

<<http://www.thumbdrive.com>>

This company develops embedded technology for DVD and VCD.

TOPF MSC Sdn Bhd (Malaysia)

<<http://www.topfmsc.com>>

This company develops Internet telephony products and applications.

WSL-MSD Sdn Bhd (Malaysia)**<<http://www.wsl.com.my>>**

Involved in the area of information display systems incorporating multimedia, networking, the Internet and intranet, this is the first company to successfully develop a flight information display system in Malaysia, which has been installed at the Kota Kinabalu Airport in Sabah.

Cuzzy Advanced Convergence Laboratories Sdn Bhd (Malaysia) <<http://www.cuzzy.com>>

This company engages in the R&D of convergent multimedia hardware, software and services. It focuses on designing and developing key hardware components, namely high definition television and high definition computer TV.

Examples of innovative and key initiatives

Perhaps the most highly publicised initiative undertaken by the government has been the setting up of MSC in 1996. MSC is located in an area of 750 square kilometres, which is larger than Singapore. It spreads from the Kuala Lumpur city centre in the north to Sepang in the south, where the Ringgit (RM) 9 billion Kuala Lumpur International Airport is situated. Two “smart cities” are being developed in MSC: Putrajaya, the new RM 20.1 billion administrative capital where the concept of e-government will be introduced; and Cyberjaya, a place that accommodates multimedia industries, R&D centres, the Multimedia University, and operational headquarters for transnational corporations which are expected to direct their worldwide manufacturing and trading activities using multimedia technology. These are some of the key incentives and attractions that MSC has provided for interested corporations. Mahathir (1998, p. 7) terms it “Malaysia’s gift to the world”.

Another, less publicised, initiative is the Demonstrator Application Grant Scheme (DAGS) initiated by NITC in April 1998. The scheme operates on the belief that unless benefits are clearly demonstrated people will not be motivated to venture into ICTs. DAGS provides seed funding (Kemp et al., 2002, p. 10) for proposals that:

- contribute to community development through ICTs
- involve tri-sector partnerships (community, private sector and state sector)
- are clear about their goals and deliverables
- have potential for expanding outreach through up-scaling or replication
- have potential for sustainability, through commercialisation, ongoing community support or some other mechanism
- are quickly realised

MSC and DAGS aside, other areas have been identified by the government for the application of ICTs. Termed Flagship Applications, the first phase of the seven applications was implemented in July 1997. These applications are divided into two separate categories:

(i) “Multimedia Development” Flagship Applications offer concrete business opportunities, comprising e- government, multi-purpose card, smart schools, and telemedicine; and (ii) “Multimedia Environment” Flagship Applications provide both Malaysian and international companies the opportunity to operate in an environment of close cooperation with leaders in the multimedia industry, research and academic institutions, and customers (Multimedia Development Corporation, 1998). This second category includes an R&D cluster, worldwide manufacturing webs, and borderless marketing. Two of these applications – the multi-purpose or smart card and smart schools – are briefly highlighted here.

The 32 KB smart card is divided into two types. The first is the Government Multi-Purpose Card, also known as MyKad. The multifunction feature of this card has been lauded as an excellent technological solution to the many daily transactions that ordinary consumers have to make. Seven (chip) applications were initially available in it: national identity card, driving licence, passport, personal health record, electronic cash, Touch ‘n’ Go payment and automated teller machine (ATM) card. The second type, the Payment Multi-Purpose Card carries two applications: MEPS Cash and ATM function (*New Straits Times*, Business Computing Supplement, 5 September 2002). The 32 KB card has now reached its limit and cannot take in any more applications. It was reported that a 64 KB card would replace the old card (*The Star*, In.Tech Supplement, 29 October 2002). There were 2.3 million MyKad holders nationwide at the time of writing, and this number is anticipated to grow to 3.3 million by the end of 2002.

The smart school project is set to enter its second phase in 2003, when the pilot phase ends. The pilot phase began in 1999 and was implemented in 87 schools nationwide. The results of this phase are still unclear, yet it has been asserted that the second phase will benefit all schools in Malaysia (*The Star*, In.Tech Supplement, 5 November 2002). What is clear is that the project is made up of numerous components, including teaching and learning materials for the Malay language, English, mathematics and science for each school level from primary 1 to secondary 5. The project also utilises management software which contains modules for managing student affairs, school regulations, finance, external sources, educational sources, human resources, facilities, hostels and technology. (*New Straits Times*, Business Computing Supplement, 5 September 2002).

More recently, a RM 2 million grant was announced by the government for assisting the blind in acquiring computers and other ICT equipment. The grant, which will be managed by the Malaysian Association for the Blind (MAB), will be used to form an equipment bank and for the setting up of a revolving loan fund to expand the association’s training programmes. MAB hopes that the aid will lead to ICT employment opportunities for the visually impaired, hence giving them more economic independence (*New Straits Times*, Computimes Section, 18 November 2002).

Enabling policies

NITA serves as the main policy statement for the development of ICTs in Malaysia. As stated in the Eighth Malaysia Plan (Government of Malaysian, 2001, p. 363), NITA provides “the framework for the orderly development of the country into an information and knowledge-based society by 2020”.

NITA is chaired by the Prime Minister and its members comprise of representatives from the public and private sectors. It functions as a think tank that advises the government on ICT strategies aimed at transforming Malaysian society in three phases. The first phase is transformation into an information society; the second phase, a knowledge society; and in the final phase the aim is to see Malaysian society qualitatively transformed into a value-based knowledge society by the year 2020.

NITA operates based on the theme of “Turning Ripples into Tidal Waves”. Corny though it may sound, the “ripples” are essentially specific initiatives by the government – MSC and DAGS being perfect examples – aimed at providing the necessary environment to empower the people, who in turn are assumed to bring about the “tidal wave” of change.

To this end, being the main mover of ICTs for the country, NITC has outlined five key areas to enable Malaysia to “migrate to the E-World of the new millennium” under what it has termed the NITC Strategic Agenda. The agenda <<http://www.nitc.org.my>> emphasizes the need to address the following five key strategic thrust areas:

E-community

The aim is to enhance the quality of life of all Malaysian communities through ICTs. The understanding is that, although geographically dispersed, communities may still interact and communicate using electronic means. A working group headed by the Minister of Energy, Communications and Multimedia focuses on developing this area.

E-public services

The aim is 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. The task here is to facilitate continual improvement of electronic delivery of goods and services to meet the changing demands of consumers. The working group dealing with this area is headed by the Chief Secretary to the Government.

E-learning

The task is to create and develop, through ICTs, formal and informal learning networks for communities, with the goal of cultivating an ethos of lifelong learning for individual, organisational and societal advancement. E-learning is seen

as the main vehicle for accelerating the growth of Malaysia’s intellectual capital. The Minister of Education heads the working group for this area.

E-economy

The emphasis is on a knowledge-driven economy, and the task in this strategic area is to oversee the optimal usage of ICTs in developing the nation’s economy, making it grow and become globally competitive. The aim therefore is to get all sectors of the Malaysian economy to participate in the knowledge-driven global economy, thus creating value and wealth. The Minister of International Trade and Industry heads the working group overseeing the development of this area.

E-sovereignty

Marching into the global economy, into the cyber world, has its implications for national sovereignty. In the face of this borderless electronic world, it is believed that there is a need to reinforce national identity, stability and integrity. The chairman of the Institute for Strategic and International Studies heads the working group in this area.

What seems evident from this section is that the policies and strategies – often generally stated, but stated nonetheless – for using ICTs to develop the nation have been planned and are already in place. The problems, all too likely, would probably lie in their implementation.

Regulatory environment

The regulatory environment for ICTs in Malaysia addresses four key areas: economic regulation, technical regulation, consumer protection and social regulation (Kemp et al., 2002).

Economic regulation refers to the promotion of competition and prohibition of monopolistic practices. It also addresses the development and enforcement of access codes and standards, the licensing of ICT sector participants and the enforcement of licensing conditions, and compliance to rules and performance or service quality (ibid.).

Technical regulation refers to frequency spectrum assignment, the development and enforcement of technical codes and standards, and the administration of numbering and electronic addressing (ibid.).

In the area of consumer protection, regulation is aimed at empowering consumers, as well as ensuring adequate protection measures in areas such as dispute resolution, affordability of services and service availability (ibid.).

Social regulation incorporates both content development and content regulation. The latter provides for the prohibition of material deemed offensive, including obscene material, and also for educating the public on issues related to content.

To maintain this environment, a slew of related laws, some old some new, are available for enforcement.

The first new laws of this nature were enacted in 1997. Generally called the Cyber Laws of Malaysia, they comprise the *Digital Signature Act 1997 (Act 562)*, the *Computer Crimes Act 1997 (Act 563)* and the *Telemedicine Act 1997 (Act 564)*. Hot on their heels, a year later, came two more: the *Communications and Multimedia Act 1998 (Act 588)* and the *Malaysian Communications and Multimedia Commission Act 1998 (Act 589)*.

The *Communications and Multimedia Act* defines the acceptable boundaries for users and outlines national ICT policy objectives. It effectively repealed the *Telecommunication Act 1950* and the *Broadcasting Act 1988*. It is promoted as an Act “based on the basic principles of transparency and clarity; more competition and less regulation; flexibility; bias towards generic rules; regulatory forbearance; emphasis on process rather than content; administrative and sector transparency; and industry self-regulation”. Indeed, it declares itself as “An Act to provide for and to regulate the converging communications and multimedia industries, and for incidental matters” (*Communications and Multimedia Act 1998*, p. 15).

The Act has four general objectives (*ibid.*, pp. 15–16):

- To promote national policy objectives for the communications and multimedia industry
- To establish a licensing and regulatory framework in support of national policy objectives for this industry;
- To establish the powers and functions for the Malaysian Communications and Multimedia Commission
- To establish the powers and procedures for the administration of this act.

The virtually all-encompassing policy objectives it outlines are (*ibid.*, p. 16):

- To establish Malaysia as a major global centre and hub for communications and multimedia information and content services
- To promote civil society where information-based services will provide the basis of continuing enhancements to quality of work and life
- To grow and nurture local information resources and cultural representation that facilitate the national identity and global diversity
- To regulate for the long-term benefit of the end user
- To promote a high level of consumer confidence in service delivery from the industry
- To ensure an equitable provision of affordable services over a ubiquitous national infrastructure
- To create a robust applications environment for end users
- To facilitate the efficient allocation of resources such as skilled labour, capital, knowledge and national assets
- To promote the development of capabilities and skills within Malaysia’s convergence industries
- To ensure information security and network reliability and integrity

The *Malaysian Communications and Multimedia Commission Act* provides for the establishment of the Malaysian Communications and Multimedia Commission, with powers to supervise and regulate communications and multimedia activities in Malaysia. It undertakes a policy implementation role, while policy is determined by the Minister. With the two major roles of implementing and promoting the national policy objectives for the communications and multimedia sector and of overseeing the new regulatory framework for the converging industries of telecommunications, broadcasting and online activities, the five-member commission has the following powers and functions <http://www.cmc.gov.my/com_powers.htm>:

- To advise the Minister on all matters concerning the national policy objectives for communications and multimedia activities
- To implement and enforce the provisions of the communications and multimedia laws
- To regulate all matters relating to communications and multimedia activities not provided for in those laws
- To consider and recommend reforms to those laws
- To supervise and monitor communications and multimedia activities
- To encourage and promote the development of the communications and multimedia industry
- To encourage and promote self-regulation in the industry
- To promote and maintain the integrity of all persons licensed or otherwise authorised under the industry;
- To render assistance in any form to and to promote cooperation and coordination among persons engaged in communications and multimedia activities
- To carry out any function under any written law as may be prescribed by the Minister by notification published in the *Gazette*

Open source movement

Until very recently, the open source movement in Malaysia seemed subdued, attracting little publicity, and whose activities and concerns appeared to be confined to a small number of geeks (see <<http://my-opensource.org/ppl.html>>). Then on 1 April 2002, the Association of the Computer and Multimedia Industry of Malaysia submitted a white paper on open source software to the Ministry of Energy, Communications and Multimedia. In the white paper, the government was urged to officially embrace the open source movement and adopt a formal stand on open source software.

In response, a few days later, at the launch of the Software Support Professionals Association, the Energy, Communications and Multimedia Minister, Leo Moggie, said that the government encouraged the development and use of open source software, adding that the entire government and not just his ministry was looking into it (*The Star*, 12 April 2002).

Suffice it to say that at this stage the open source movement in Malaysia is still very much in its infancy. This

is hardly surprising since pirated software is still freely available, despite regular crackdowns by the authorities. Equally, there is still some confusion and much ignorance on the part of the public as to what open source is all about, and a tendency to stick with the tried and tested, more so when pirated copies of established software abound.

Nonetheless, with full government backing, as evidenced by the above announcement of the ministry and illustrated by the more recent announcement that the state government of Selangor, one of Malaysia's richest states, is "to train its staff in open source and Linux-based office and desktop applications as early as the second quarter of next year" (*Computimes*, 18 November 2002, p. 4), it would seem that the future of open source in Malaysia is looking good.

Future trends

From this discussion, it would seem that Malaysia is well on the path to full utilisation of ICTs for the development of the country. The government is helming the effort and seems dead set on making the country a global ICT player. Policies have been enacted and strategies covering the relevant areas are in place. The trends indicate a situation of "more of the same", certainly over the next five years, when ICTs will be harnessed more emphatically in predefined strategic areas.

However, the jury is still out on the viability and sustainability of many of the projects. Granted, many are just approaching the end of their pilot stage. But, before grandiose plans are made for the next stage, perhaps more information on the earlier stages should be made available to the public to enable greater public scrutiny and independent analyses and to enable genuine people participation, as often stressed in the numerous objectives and in what seem like mission statements. It is, for example, not enough to simply declare that the pilot smart school project has been a "success" just because more schools have been provided with computers and more students are now "computer literate", however vague that term may mean in a real sense. Qualitative follow-up studies need to be done in a systematic manner to garner more substantive and useful data on this and other projects, to gauge actual ICT usage, the benefits accrued and the costs incurred.

Taking the smart card (MyKad) as another example, the card is embedded with a chip or microprocessor that has the capability to perform a wide range of functions, including data processing, storage and file management. While it may indeed provide an excellent technological solution to the many daily transactions that ordinary consumers have to make, what is sidelined is the fact that such a card also has the potential to launch a serious assault on civil liberties and privacy. It allows the state or businesses to pinpoint the location of an individual at a particular moment and to examine his or her daily pattern of activities whenever the individual concerned uses it (Robins & Webster, 1987).

Moreover, with personal data stored in the card, companies can analyse social data and then use or disseminate the information. Needless to say, such a form of surveillance has Orwellian implications for individuals and society.

Greater political control notwithstanding, there is certainly also a need to remind ourselves then that, just as radio and later television were initially touted as panaceas for the development of people but led instead to greater dependency on both the domestic and international fronts, ICT – this "new" technology – must be critically evaluated for relevance in particular political and economic settings. This is what seems missing from the overall equation. What seems more evident is an all-out embracing of the technology with not much thought for its medium- to long-term implications.

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