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A Review of Development and Adoption of Internet and ICT in Malaysia

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Abstract

The main objective of this study is to review the development and adoption of Internet and ICT in Malaysia. The adoption of ICT already introduced in Malaysia in 1960s. Refer to 21st century, number of studies shows that development and adoption of Internet and ICT in Malaysia is among the highest in the ASEAN countries.

Keywords: **Internet and ICT**

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INTRODUCTION

From the 1955 to 1995, the concept of the IT expanded that covers three stages of the

evolution. This includes Electronic Data Processing (EDP) era, Management Information Systems (MIS) era, and Internet era (Seddon, 1997).

Computers were first introduced in Malaysia in 1960s and used in the public sector. In the 1970s, the government began to coordinate the usage of computers in most of the ministries. The first public network, MAYPAC, was implemented by Telekom Malaysia in 1980s. The establishment of Government databases was increased during the late 1980s and early 1990s. At the beginning of the 21st century, most of the government agencies have launched their Web site. In the early and mid 1990s, use of ICT in the government sector focuses on individual agencies effort in modernising the administration; education and training, and information provision for public, researchers, and business usage (Buyong, 2001).

It seems that practically anything in Malaysia to do with ICT uses the word multimedia. For example, the ICT policy-maker is the Ministry of Energy, Communications and Multimedia; Malaysia Communications and Multimedia Commission (MCMC) refers to the industry regulator; the Multimedia Super Corridor (MSC) is the country's answer to Silicon Valley; and the Multimedia University is the nation's ICT institute of higher education. This could easily be construed as over hype, particularly as many governments are paying lip service to the Internet age but rarely back their public proclamations up with concrete actions. However something appears to be going on in Malaysia in its embrace of ICT as a lever to lift it to developed country status by the year 2020, and it is called Vision 2020 (Minges and Gray, 2002).

The dotcom situation in Malaysia is merely getting started; in fact it is taking its first few 'baby steps'. Many businessmen, from a traditional business background with existing ties to the bricks-and-mortar business and access to funds are firing up local Web ventures. The number of new participants to this infant Internet industry is small and this follows the low Internet usage and small rate of adoption (Karunakaran, 2000). In 2001, IDC's Marco Polo study indicated that only 41% of Malaysians' Web spending was done in local sites, 8% in the Asia Pacific region and the remaining 51% in international sites (Rahman, 2002). Marketers still seem to adopt a "wait-and-see" stand. Currently, the cost benefit of going online may still be unclear for some businesses, which may be the cause of them holding back (Fatt, 2001).

OBJECTIVE

Radio achieved 50 million users 38 years after its introduction and television after 13 years. But, for the Internet only took 4 years after its introduction (Fox, 1999; Parsons, Gallagher and Foster, 2000). The spread of Internet technologies has heralded the emergence of a new economy with the development of the quintessential new economy type of business, E-Commerce firm. Identification of structural changes emerging from the interaction between business and technology in a society illuminates the way that organisations are implicated in societal and economic change and helps to contemplate their future within society (Katz and Safranski, 2003). Number of researches has been done in Year 2000 – 2003. Thus, the main objective of this study is to review the development and adoption of Internet and ICT in Malaysia between Year 2000 – 2003.

DEVELOPMENT AND ADOPTION OF INTERNET AND ICT

Number of studies has been done between 2000 – 2003 related to the development and adoption of Internet and ICT in Malaysia. According to Datuk Leo Moggie, ex Minister of Energy, Communications and Multimedia in his speech at the launch of ICT Week, in terms of progress, Malaysia's level of ICT adoption is among the highest in the ASEAN countries (Ang, 2002).

For the 2000 survey general trend of ICT applications, a total of 209 companies responded to the survey accounting for a response rate of 14.3% (NPC Productivity Report, 2000):

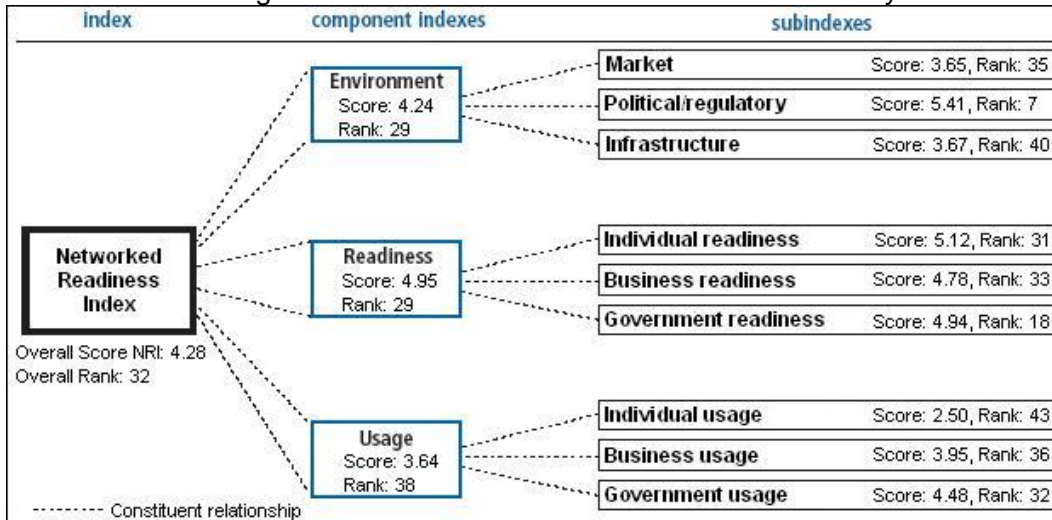
- For the ICT infrastructure, microcomputers remained the most extensively used type of computers with 91% of companies using them. The use of workstations and minicomputers had decreased to 35% (1998:47%) and 18.5% (1998:39.8%) respectively. 54.1% of companies used client servers and 52.7% with standalone systems. 31.9% of companies used host-based systems while the more complicated systems like host-based integrated with client server and the multi-channel access networks accounted for 25.6% and 15%. Companies also provided high accessibility to PC/terminal where 55.7% indicating a ratio of one user to one computer.
- Email was used by 77.7% of users while in 2000 it increased to 89.9%. Majority of companies (94.2%) have access to the Internet and 85% of them use mail messaging. Internet also allows users to obtain news and references (74.4%) and doing business research (67.6%). Only 24.2% use the Internet to operate online sales and purchases. 62.3% of companies have their own Web site and most of them (63.8%) used it to support their marketing functions.
- Most companies used ICT in area of operations (95.2%) and sales and marketing activities (86.9%). In the support activities, two areas where high usage of ICT is indicated are in the financial and accounting (96.6%) and general administration (93.3%). In terms of intensity, the study showed that intensity of ICT is high for almost all the areas in the support activities, which comprises general administration (44.3%), finance and accounting (76.2%), procurement/purchasing (29.2%) and human resource development (26.6%).
- 42% companies invested between RM100 000 to less than RM1 million; and only 7.3% spent RM5 million and above on ICT that are mainly financial institutions and insurance companies.
- Issues concerning cost of implementing ICT include high cost of maintenance (48%) and high capital outlay (47.2%). The other problems are keeping pace with the technology changes (45.3%), lack of qualified ICT staff (31.6%) and resistance to change by users (27.6%).
- The impacts of ICT are better customer service (73.6%), innovating new process (55.7%), promoting revenue growth (45.7%), forming business alliance (44%) and innovating new product (43.4%).

Based on a joint research between IDC and WorldTimes in 2000, Malaysia is ranked 32 out of 55 countries on the Information Society Index (ISI). Over the last 5 years, the government has spearheaded some key initiatives, example MSC, which have been significant to the overall development of ICT in Malaysia. With these major milestones, Malaysia has continued to increase the usage of ICT and attract more foreigners to

invest in Malaysia. There more foreign IT vendors investing in Malaysia either setting up their regional base in Malaysia or a sales office because of the favourable business environment. Investment in Malaysia is considerably low compared to more developed nations like Singapore and competitive compared with countries such as Thailand or China, as well as has a significantly large pool of skilled workforce, thus the cost of hiring has remained competitive in Asia Pacific (IDC, 2002).

A study based on the Networked Readiness Index (NRI) framework 2002–2003 shows that Malaysia is ranked 32 with the score of 4.28 (Figure 1) (World Economic Forum, 2003).

Figure 1: The Networked Readiness Index of Malaysia



Source: World Economic Forum (2003)

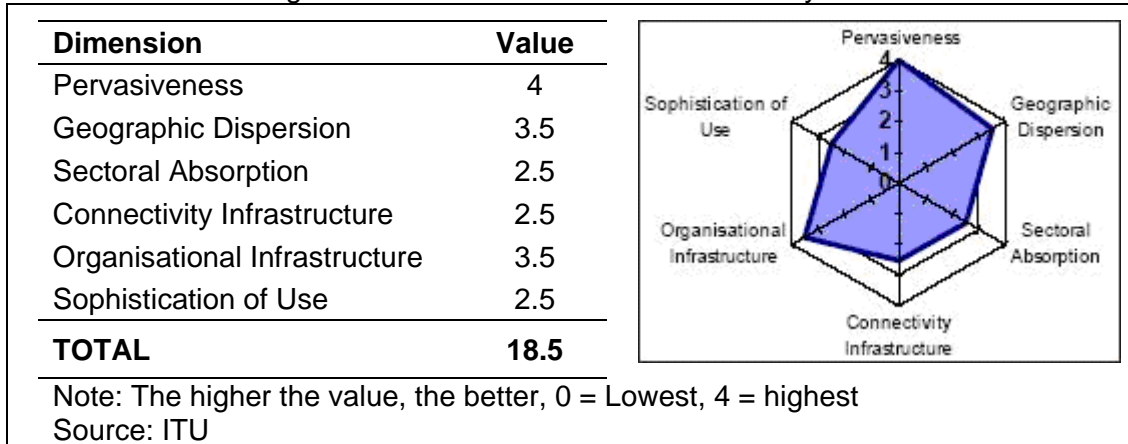
A result of study in April 2001 by using 'Framework for characterising the state of the Internet' (The Mosaic Group, 1998) as the research methodology based on six dimensions are pervasiveness, geographic dispersion, sectoral absorption, connectivity infrastructure, organisational infrastructure and sophistication of use can be described as below (see Figure 2) (Minges, Gray and Firth, 2002).

- Pervasiveness is rated at level 4 that is Pervasive. At December 2000, there were approximately 1.2 million Internet subscribers in the country translating to an estimated four million users, or 17.2% of the population.
- Geographic dispersion is rated at level 3.5, that between highly dispersed and nationwide.
- Sectoral absorption is rated at level 2.5 that is between moderate and common. There is a high connectivity at all ministries and state governments, as well as the university and schools levels, which 1300 out of some 8900 In 1999, less than 20% of SMEs had a Web site while the corresponding figure for larger companies was 44%.
- The connectivity infrastructure is rated at level 2.5 that is between expanded and broad. International connectivity is over 350 Mbps and it offers a domestic

backbone of 155 Mbps. High-speed local accesses is limited with leased line and ISDN being the main access method.

- The organisational infrastructure is at level 3.5, that between competitive and robust. The two leading ISPs, JARING and TMnet dominate the Internet services.
- Sophistication of use is at level 2.5 that is between conventional and transforming. The Malaysian government has equipped core areas in the MSC with high-capacity global telecommunications and logistics networks.

Figure 2: The State of the Internet in Malaysia



Source: Minges, Gray and Firth (2002)

Another study based on “E-Readiness” (The Economist Intelligence Unit, 2003), or the extent to which a market is conducive to Internet-based opportunities, takes into account a wide range of factors, from the quality of IT infrastructure to the ambition of government initiatives and the degree to which the Internet is creating real commercial efficiencies. Nearly 100 quantitative and qualitative criteria, organised into six distinct categories, feed into the E-Readiness rankings. Below is the E-Readiness for Malaysia (see Table 1).

Table 1: EIU 2003 E-Readiness for Malaysia

| Ranking (of 60 countries) | Overall score (score of 10) | Connectivity (score of 10) | Business environment (score of 10) | Consumer and business (score of 10) | Legal and policy adoption (score of 10) | Social and cultural (score of 10) | Supporting E-services (score of 10) |
|---------------------------|-----------------------------|----------------------------|------------------------------------|-------------------------------------|---|-----------------------------------|-------------------------------------|
| 33 | 5.6 | 4.3 | 7.2 | 5.5 | 5.9 | 5.5 | 4.8 |

Source: The Economist Intelligence Unit (2003)

CONCLUSION

The evolutions of the Internet and ICT have occurred so far. There is the explosive spread of the technology itself. It is estimated that the Internet, arguably the most important part of the new technological environment, has expanded by about 2,000% in the last decade and that it is doubling in size every six to ten months (Hoffman and Novak, 1996a). The spread of Internet technologies has heralded the emergence of a new economy with the development of the quintessential new economy type of business, the Internet E-Commerce firm. Identification of structural changes emerging from the

interaction between business and technology in a society illuminates the way that organisations are implicated in societal and economic change and helps us to contemplate their future within society (Katz and Safranski, 2003).

Many of the businesses that are piling onto the Internet may totally misunderstand what this medium is all about (Willcocks, Graeser and Lester, 1998). Marketer cannot succeed in exploiting Internet and ICT unless the right IT infrastructure and development are take place to meet the demands of the users. In the ICT area significant importance has been placed on perceived usefulness as a significant contributor to attitudes and adoption of new technology (Fenech and O'Cass, 2001). "If a firm adopts ICT-based innovations without a clear understanding of the scope and implications of that adoption, then not enough attention may be paid to realigning business strategy. As a result, business resources needed to achieve competitive advantage from the ICT investment may not be made available and the investment in innovation may in the end be wasted, or even be detrimental to the firm's pre-adoption competitive position" (Pires and Aisbett, 2002).

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