NARROWING THE DIGITAL DIVIDE

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I INTRODUCTION

1. MSC Malaysia (previously known as Multimedia Super Corridor) was conceptualised in 1996 in response to Malaysia's aspiration to develop K-Society and K-Economy. The implementation of MSC Malaysia is divided into three phases, as follows:

Diagram 1: The MSC Malaysia Vision
Source: http://www.msc.com.my/msc/msc.asp

2. The Ninth Malaysia Plan (9MP) focuses on efforts to democratise education in order to provide equal access to quality education and create citizens with "first class mentality". To achieve this, we need to provide education to as many members of the society as possible. Various efforts have been carried out by relevant authorities in order to achieve this. Among them is promoting and providing opportunities for lifelong learning for ordinary working people in order to obtain the necessary academic education. OUM was given the mandate by the Ministry of Higher Education (MOHE) to implement the Open Entry and Recognition of Prior Learning in its admission exercise. With this mandate, OUM will be able to accept adults with relevant working experience and skills into its programmes, albeit with minimum academic qualification.

3. The Malaysian Government has launched the National Higher Education Plan 2007-2010 in August 2007, which articulates the MSC Malaysia Vision to transform Malaysia into a knowledge society and hence lead in the K-Economy by year 2020 and beyond. This effort by MOHE is highly commendable and very timely. In the last decade, we saw the cost of labour in Malaysia escalated, thus undermining the country's capability to compete with other emerging industrial countries such as China and India in term of providing cheaper labour. Instead, Malaysia is now focusing on attracting foreign investors based on high level competencies and skilled manpower. In order to enhance its competitive edge, Malaysia must continue to enhance the skills of its people and one way to do this is via lifelong learning initiatives. In this regard, ICT is one tool that should be utilised for that purpose.

4. The paper will discuss the role of ICT as a catalyst to promote greater access to higher education and knowledge dissemination amongst the working population. It will also discuss current challenges in ICT with regard to the digital divide, and how Malaysia seeks to respond to the issue of digital imbalance, at the national and institutional levels.

II ICT and Education

5. Information Communication Technology (ICT) especially the internet has changed the way we do business, how we learn and educate society, how we work and socialise and many more. In short, internet has revolutionised our life as the world has shrunk into one global village, eliminating geographical boundaries between countries. Now, one could live in one country, work, shop, do business, or study in another. The role of ICT and education in putting Malaysia into the global map cannot be denied, especially during the lat decade. The use of ICT in education through e-learning can play a vital role in democratising education, especially in developing countries. Apart from providing a cost effective means of delivery and creates an education experience that is more responsive to the learners' needs and aspirations, it provides the flexibility that allows the learners to study at anytime and place. In fact, the use of ICT in Malaysia is now entering the fifth

generation stage, where it not only enables access to interactive web-based multimedia learning materials and computer-mediated communication, but has advanced into automated response systems.

6. To a large extent, Open and Distance Learning (ODL) institutions all over the world have capitalised on the potentials of ICT in their delivery system. Open University Malaysia (OUM), the first Open Distance Learning (ODL) institution in Malaysia, has been capitalising on ICT in its unique blended pedagogy since its inception in 2000. Starting with 753 learners who enrolled in 4 programmes in 2001, the current total enrolment is over 65,000 learners in 51 programmes at 61 learning centres across the country. Ninety five percent (95%) of our learners are working adults, indicating that OUM has significantly contributed towards the government's agenda to promote lifelong learning. OUM aims to achieve Mega University status by 2010, by having more than 100,000 learners enrolled in its programmes.

III Digital Divide

7. In this globalisation era, digital imbalance exists everywhere in the world, especially in the developing countries. Earlier studies in the US showed that digital divide existed along gender, racial, geographic, education, income, and age (Knight & Mann, undated). Since the 1990s, Malaysia has been experiencing phenomenal growth in the utilisation of ICT. The internet penetration rate has increased by more than threefold since 2000, with 52.7% penetration or 14.9 million users have access to the internet as shown in Table 1.

YEAR	Users	Population	Penetration Rate
2000	3,700,000	24,645,600	15.0 %
2005	10,040,000	26,500,699	37.9 %
2006	11,016,000	28,294,120	38.9 %
2007	14,904,000	28,294,120	52.7 %

Table 1: Malaysia Internet Penetration Rate
Source: http://www.internetworldstats.com/asia/my.htm

ASIA	Population (2007 Est.)	Internet Users, (Year 2000)	Internet Users, Latest Data	Penetration (% Population)	(%) Users in Asia	Use Growth (2000-2007)
1. Hong Kong *	7,150,254	2,283,000	**4,878,713**	68.20%	1.10%	113.70%
2. Japan	128,646,345	47,080,000	**87,540,000**	68.00%	19.10%	85.90%
3. Korea, South	51,300,989	19,040,000	**34,120,000**	66.50%	7.40%	79.20%
4. Singapore	3,654,103	1,200,000	**2,421,800**	66.30%	0.50%	101.80%
5. Taiwan	23,001,442	6,260,000	**14,500,000**	63.00%	3.20%	131.60%
6. Malaysia	28,294,120	3,700,000	**14,904,000**	52.7%	3.20%	302.80%
7. Brunei Darussalem	403,500	30,000	**165,600**	41.00%	0.00%	452.00%
8. Macao *	500,631	60,000	**201,000**	40.10%	0.00%	235.00%
9. Vietnam	85,031,436	200,000	**17,220,812**	20.30%	3.70%	8510.40%
10. Philippines	87,236,532	2,000,000	**14,000,000**	16.00%	3.00%	600.00%
11. Thailand	67,249,456	2,300,000	**8,465,800**	12.60%	1.80%	268.10%
12. China *	1,317,431,495	22,500,000	**162,000,000**	12.30%	35.30%	620.00%
13. Mongolia	2,601,641	30,000	**268,300**	10.30%	0.10%	794.30%
14. Azerbaijan	8,448,260	12,000	**829,100**	9.80%	0.20%	6809.20%
15. Indonesia	224,481,720	2,000,000	**20,000,000**	8.90%	4.40%	900.00%
16. Kazakhstan	14,653,998	70,000	**1,247,000**	8.50%	0.30%	1681.40%
17. Georgia	4,389,004	20,000	**332,000**	7.60%	0.10%	1560.00%
18. Pakistan	167,806,831	133,900	**12,000,000**	7.20%	2.60%	8861.90%

Table 2: Internet Penetration Rate as at 30 September 2007

Source: http://www.internetworldstats.com/asia/my.htm

* For statistical purposes, China figures do not include SAR Hong Kong and Macao which are reported separately

8. Among Asian countries, Malaysia is ranked sixth in term of internet penetration in 2007. Even though the evidence shows that the use of ICT has been growing at a rapid rate, there are still considerable segments of the society who have limited or no access to ICT. A gap still exists between those with access to information superhighway and thus able to utilise the information for its benefits, and those without access and thus denied of its

opportunities. Digital divide prevails for those in the rural areas, the poorer states, the low income groups, youth and women, senior citizens, the handicapped and small and medium enterprises, as they are not able to participate actively to reap the benefits from the Information Superhighway. Lack of telecommunications infrastructure is the primary factor contributing to the slower growth in the provision and use of ICT in the rural areas. Another main factor is connectivity. Most of the telecommunications network development is concentrated in the Klang Valley and other urban centres of Ipoh, Pulau Pinang and Johor Bahru, resulting in inequality of access between the urban and rural areas.

9. Access to personal computers (PCs) is critical for internet growth. However, the Basic Amenities Survey for 2004 indicated that the national household PC penetration is only 28.2%. Selangor and Wilayah Persekutuan Kuala Lumpur have the highest penetration rate of 43.9 percent and 35.9 percent respectively while Kelantan dan Trengganu having the lowest penetration rate of 16.2 percent and 19.8 percent respectively, indicating an imbalance in access to technology among the states in Malaysia. Digital divide is not only about the availability of computers and internet access. It also includes the people's ability to make use of ICT tools to engage in productive and beneficial social and/or economic activities. With English as the main language in the global village, those with poor command English will be further deprived from taking advantage of these opportunities. It is widely accepted that people in the rural areas are less proficient in English. The same can be said about IT skills among the same group of people. These are the challenges and issues that we have to address to narrow the digital divide, to provide the best ICT services and to encourage innovation and growth in our society.

IV Narrowing the Digital Divide

Government Efforts

10. In the Ninth Malaysia Plan, 2006-2010, the Government of Malaysia is committed to bridging the digital divide by implementing an infrastructure plan for universal access to

the internet under the National Strategic Framework for Bridging the Digital Divide. The current ICT policy with regard to narrowing the digital divide is through the upgrading and expanding the communications infrastructure to increase accessibility throughout the country. Efforts will be focused on upgrading communications network in line with technological advancements, providing broadband access on flat rate that are affordable, thereby extending ICT infrastructure to rural areas.

11. The Ministry of Electricity, Water and Communication (MEWC) has embarked on several initiatives to reduce the digital imbalance, through ensuring equitable provision of affordable ICT services as set out by the Communication Multimedia Act 1998. The main objectives as provided in the Act are:

i. To establish Malaysia as a global centre and hub for communications information content services;
ii. To promote a new civil society where information-based services will provide the basis of continuing enhancements to quality of work and life;
iii. To grow and nurture local content and culture;
iv. To give priority for the long-term benefits of the end user;
v. To promote consumer confidence in the industry;
vi. To ensure access and equitable services;
vii. To create a robust applications environment for end users;
viii. To allocate resources efficiently;
ix. To develop sector capabilities; and
x. To provide secure and safe networking.

12. Our generation is generally referred to as digital migrants. In the process, we have to go through painstaking efforts to embrace IT in our daily life. For the country to enhance its competitiveness in ICT, we need to nurture the next generation to be digital natives, who are well-equipped with the required ICT skills. Thus, the flagship application of MSC Malaysia on Smart School project is long overdue. Smart School is a learning institution that has been systematically reinvented in terms of teaching and learning and school

management processes in order to prepare students for the information-based society. The objectives of the Smart School, which are based on Malaysia's National Philosophy of Education, are as follows:

i. To produce a thinking and technology-literate workforce;
ii. To democratise education;
iii. To increase participation of stakeholders;
iv. To provide all-round development of the individual; and
v. To provide opportunities to enhance individual strengths and abilities.

13. MEWC, in cooperation with the Ministry of Education (MOE) and several multinational companies have launched a project called SchoolNet in February 2004. By leveraging on existing initiatives such as Smart Schools and Universal Service Provision (USP) project, the SchoolNet was intended to provide broadband access to more than 10,000 schools nationwide, focusing particularly in the rural and remote areas. While SchoolNet concentrates on the carriage and distribution of education content and serves as a school-wide Intranet, the infrastructure that was deployed for the project was also intended to serve as a springboard for the community outside the schools. For the rural and urban marginalised communities, Mobile Internet Unit (MIU) was established with initially three buses equipped with 20 PCs each, visiting schools and villages without internet connectivity. MIU is a development project on computer-mediated education for school teachers and students. Its main objectives are to promote ICT awareness and literacy, as well as provide electronic classroom experience for them (Idrus & Atan 2004).

14. Connectivity issues in the rural areas are also being addressed through initiatives that include the Rural Internet Centres (RIC) programme by MEWC. The programme was developed as a holistic approach to establish internet access in the rural areas by focusing on infrastructure needs, capacity building as well as content development. To date, 42 RICs throughout the country have been equipped with five to six PCs each and they are connected to the Internet via ADSL or ISDN. Statistics compiled in July 2004 indicated

that more than 53,000 users have used RIC services while more than 35,000 users have undergone training under the RIC training programmes since its implementation.

15. The National Information Technology Council (NITC) was entrusted to develop strategies to implement and utilise IT. NITC has formulated several polices in order to encourage the wide use of ICT. Among them are one-home-one-PC campaign, the abolishment of taxes on computers and its components, tax rebates for personal purchase of computers; and EPF withdrawals scheme to purchase computers. All these efforts are meant to increase the affordability to own PC by all Malaysians. However, it should be noted that the price of computers and connectivity fees are still relatively expensive for the poor and that the abolishment of the EPF withdrawal scheme has disadvantaged those who genuinely want to purchase computer.

16. The expansion of MSC will see more cyber cities and cyber centres to be set up nationwide. In the first phase (1996-2004) of MSC, five cyber cities were set up which were Cyberjaya, UPM-MTDC, Technology Park Malaysia, Kuala Lumpur City Centre and Kuala Lumpur Tower. Two cyber cities and four other cyber centres were set up under the second phase (2005-2010). The cyber cities are Penang Cybercity One at the Bayan Lepas Free Trade Zone in Penang, and Kulim Hi-Tech Park in Kedah. The four cyber centres are KL Sentral in Kuala Lumpur, Malacca International Trade Centre in Malacca, Menara MSC Cyberport in Johor. and the latest is Meru Raya MSC Malaysia Cybercentre in Ipoh, Perak. The expansion of MSC is seen primarily as a step to reduce the digital inequality among the population in Malaysia. It will enable more people to enjoy the benefits of ICT infrastructure and high quality ICT services.

OUM Efforts

17. At the institutional level, several organisations, universities as well corporations have undertaken steps to bridge the digital gap in the country. Examples are TMNET, IBM, Petronas and other multinational companies. In this regard Open University Malaysia

(OUM) has also undertaken several bold steps to bridge the digital gap among its learners. Since its inception, OUM has committed itself to developing an effective ICT infrastructure and providing an extensive range of ICT services to its learners. And it continues to enhance its ICT capabilities as it grows. OUM's total ICT expenditure increased from RM5.3 million in 2002 to RM21 million in 2006, a fourfold increase (See Table 3).

Item	2002	2003	2004	2005	2006
Total expenditure	RM 5,268,000	RM 9,220,290	RM 12,876,720	RM 16,979,730	RM 20,934,120
Capital expenditure	RM 4,046,870	RM 7,276,630	RM 10,288,660	RM 14,133,300	RM 17,027,620
Operating expenditure	RM 1,221,130	RM 1,943,660	RM 2,588,050	RM 2,846,430	RM 3,906,500
ICT spending per student	RM 678	RM 565	RM 476	RM 458	RM 384
ICT spending per active student	RM 932	RM 736	RM 664	RM 647	RM 642
ICT spending as a % of total expenditure	*17.5%*	*17.7%*	*18.1%*	*20.0%*	*19.7%*

Table 3: OUM's ICT Spending as a Percentage of Operating Expenditure

18. The hub of OUM's delivery system is its e-learning portal, myLMS, which was internally developed. It is fully integrated with other OUM's systems such as the Student Information System (SIS), Human Resource Information System (HRIS), Financial Information Systems (FIS) and Management Information Systems (MIS). The technology used to develop the portal enables it to be dynamic, which allows for further expansion and modification. MyLMS is also a flexible system that allows learners to easily manage their learning environment. We are proud to say that myLMS has won several awards, locally and internationally. Among them were, runner-up for Asia

Pacific IT Award, from Asia Pacific ICT Association, Kuala Lumpur in October 2006; and E-learning Recognition from Eszerhazy Karoly College of Hungary. The latest achievement was Award in Excellence in Education Management from Technology Business Review, Kuala Lumpur in October 2007. Several local public universities have also purchased and used our myLMS. As an additional feather in our cap, the Ministry of Higher Education (MOHE), Kingdom of Saudi Arabia has chosen myLMS as the learning platform for its National E-learning Centre. These are evidences that the OUM's teaching and learning system, myLMS, has gain acceptance and recognition both locally and internationally. To date, I am pleased to inform that more than 100,000 users are using OUM's myLMS.

19. At the early stage of operation, the acceptance of e-learning among learners and staff was low. This is because being working adults who are digital migrants, embracing ICT is stressful and time-consuming to them. However, as the year progresses, and through rigorous use and training, the level of acceptance and satisfaction has increased significantly. As at the end of October 2007, myLMS have registered 8.1 million hits for the year. As for our digital library, it currently holds 23 multi-discipline online databases, comprising of e-books, e-journals, e-dissertations and e-newspapers containing more than 52,000 titles of e-books and 22,000 titles of e-journals making it one of the largest online resources in Malaysia. This impressive collection is easily assessable from anywhere in the world.

20. All the above efforts are in line with the Government's initiatives to strengthen Malaysia's positions as a preferred global location of ICT investment and a market leader of ICT solutions and represent OUM's contribution towards this end. With ICT, OUM is able to reach almost all its learners, irrespective of distance and time.

21. In order to continue providing effective ICT services to its learner's, OUM is committed to the following:

i. Further developing quality e-learning system;
ii. Further enhancing ICT infrastructure;
iii. Further developing new pedagogy;
iv. Further promoting e-learning culture; and
v. Further developing dynamic e-learning contents.

V Conclusion

22. We must champion the use in ICT in democratising education to provide wider opportunities to the all levels of our society to participate in lifelong learning. We must admit that there is no simple solution to overcome the problem of digital divide – issues such as costly infrastructure, connectivity, adequate resources, lack of usage, the language barriers etc. must be tackled simultaneously. Our challenge is to convert the digital divide into digital opportunities. Our government must ensure that the real needs and priorities of digitally impaired groups are appropriately addressed. This is one of the imperatives for Malaysia to ensure that it is able to provide Q-Education and hence become a centre of educational excellence.

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