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## Bridging Digital Divide in Malaysia: Cyber Learning for the Marginalized Community

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### Abstract

The Malaysian National Strategic Framework of Bridging Digital Divide listed three main issues on the applications of ICT which relate to the access, the adoption and the value of using ICT among Malaysian community. This paper will present the findings of an impact research on the use of telecenters as the catalyst for cyber and e-learning. The research utilized a set of questionnaire, interview and focus group and the total numbers of respondents are 556 Malaysians who utilized 18 telecenters in Peninsular Malaysia. The findings reveal that there is a positive impact on the use of the telecenters among Malaysians and the telecenters need to be transformed to better service and meet one of the needs of the community, which is to access information, and subscribe to cyber learning. The provision of online learning materials and courses will add value socio-economically, educationally and the livelihood of the marginalized communities. As the vision of the National Strategic Framework is to bridge the digital and mental divide among those at the rural and urban areas and those who have and those who have not there is an immediate need to educate the community with the appropriate digital content and upgrade the ICT infrastructure at the telecenters which are the main Internet access point for the marginalized community in Malaysia. The introduction and connection of broadband at the telecenters will also promote easier and faster access to the online information and assist the process of e-learning and cyber learning for all.

### Keywords

Digital Divide, Cyber Learning, Marginalized Community

### Introduction

The applications of computers in and the internet revolution in Malaysian quantum leapt after the intro-

duction of the Multimedia Super Corridor Project which was formed in three phases in which from year 1996-2003 the fundamental of ICT infrastructure was established. The second phase is in 2003-2010 to establish a web of corridors linking the first corridor at Cyberjaya and Putrajaya to other cybercities in northern, eastern and southern states of peninsular Malaysia and all other global cybercities. The National Broadband Plan which was approved by the government in October 2004 will of course expedite the linking and the networking of the major cities an urban user and others at the rural and marginalized areas. Information can be easily disseminated and accessed by the communities and in the year 2009 the linking and connectivity of all telecenters with broadband and wireless technology will definitely transform all telecenters as important agents and access points for e-inclusion and online activities. The third phase of the project will enhance further the connectivity to the internet via better infrastructure planned and will be developed (2010-2020) and hopefully Malaysia will transform as a developed and information rich society by then.

## 2 Literature review

### 2.1 Telecenters in Malaysia

The planning and development of the ICT infrastructure in the Multimedia super corridor project and the Malaysia broadband connection will of course increase the penetration rate of internet and also the use of ICT for information search and e-commerce. The Malaysia strategic framework on bridging digital divide not only aim to firstly provide the best ICT infrastructure to all Malaysians but also to adopt the use of ICT as their way of life especially in the economic transaction e.g.: online banking, online purchase and the use of smart cards and the use of ICT will provide opportunities for the betterment of life e.g. improved economic status, higher achievement of academic value. For the marginalized communities,

which are located at the remote areas in peninsular Malaysia and also the Sabah and Sarawak, the telecenters are their major access points to the information gateway. The current status of the telecenters in Malaysia is as stated in Table 1.

Table 1: Telecenters in Malaysia

Types of Telecenter	Numbers of Telecenter
Universal Service Provision (USP)	1588
Rural Internet Center (RIC)	42
Medan Infodesa (MID)	42
USP Communications Center (UCC)	12
Rural Broadband Library	44

Table 1 above displays the current number of telecenters in Malaysia. There are five main types of telecenter, which are identified as Universal Service Provision (USP), Rural Internet Center (RIC), Medan Infodesa (MID), Rural Broadband Library and USP Communications Center (UCC). Each model of the telecenters has its own objectives, aims, basic infrastructures, business activities, hierarchy and structures and its means of financial supports. The current status of each telecenters is evaluated according to its Infrastructures, Activities, and Sustainability. The objective of this paper is to describe how the telecenters can be used as conduit for cyber learning for the marginalized communities by drawing on the current research findings of the marginalized community's readiness in accessing information and their needs in learning via online.

### 2.2 Telecenter Models

One of the focus areas which is going to be implemented in the Malaysian Plan 200-2010 is to produce Malaysians who could embrace the lifelong learning as their culture. In realizing this effort various e-community projects have been planned and implemented to assist Malaysians of all walks of life and at different age level to use and access ICT. Some of these projects are Medan Info Desa implemented by the Ministry of Rural and Regional Development, Pusat Intenet Desa sponsored by the Ministry of Energy, Water and Communication and Multimedia Commission. These e-community centers have been set up to create awareness and to provide ICT access and training to the communities. The services and information provided by these e-enters include computer classes, typing classes, community activities and advertisements of cottage industries.

A study was conducted by Norizan Abdul Razak

and Mohamad Zaki Ibrahim 2008 on the impact of telecenters to the community and found there is a good prospect of e-community centers to be utilized as the access points in assessing information and materials for lifelong learning. Their findings indicate that as the available projects are sponsored for two to three years, sustainability of the projects and the functions of the telecenters as Internet access points must be considered carefully and planned in the transformation exercise of the telecenters in Malaysia. This is due to the fact that the computers supplied will usually have 3 years of shelf life and need maintenance and upgrading. Without monetary assistance and telecenter supervisors paid by the government agencies it is difficult for the telecenters to survive and meet the objectives of marginalizing the digital and knowledge divides at the marginalized areas. Many of the telecenters are not able sustainable yet and still in need of monetary support to fulfill its social responsibility. In order for the telecenters to be sustainable they must also be well equipped with the adequate number of hardware and services for the community. The telecenters must provide services beyond typing, printing and computer literacy courses. It should also provide demos, how to sessions to use online services such as e-banking and subscribing to e-learning materials and courses. The supervisors of the center must also be well-trained, full time and collaboration with other agencies and such as banks, associations, travel agents and online services could help them to get better financially. The provision of cyber learning materials and modules for learning can also benefit many in the long run. The supervisors will also be fully occupied to teach ICT courses and also to assist others to learn online and once they are trained they can also be the provider or writer of online learning materials.

### 2.3 Broadband Applications

The National Broadband Plan (NBP) was strategized to strengthen the nation's infrastructure for the next 3 years and the Malaysian government is to ensure the employment and supply of broadband in Malaysia. The objectives of the NBP are to provide ample broadband equities by 2008, increase demand of broadband through content and application services, explore various funding means, and identify gaps in regulations and introduce one; if necessary. The NBP Secretariat, under the Ministry of Energy, Water and Communications (MEWC) with the Multimedia Communications and Multimedia Commissions (MCMC) was then established to regulate the agency. It is planned by 2010 all Telecenters will be connected with broadband access.

The roles of the NBP include spearheading inter-

net connectivity seamlessly, ensuring the presence of multimedia content and services, hard and soft infrastructures, aiming at Key Performance Indicators (KPI) to reach 2.8 million by 2008, ensuring optical fiber access makes up for 10% penetration rate for broadband, and projecting that by the end of 2010, 75% of household has broadband access. NBP also needs to ensure that there would have been 30% penetration rate of broadband subscribers.

The NBP exists to transform Malaysia into a communication and multimedia world hub through broadband access and subscription, apart from the fact that broadband contributes to more quality services and fixes the ever-changing infrastructure for competitive international economic purposes. The NBP plays its roles to serve the need to regulate productivity level and business interactions among Malaysian businesses. The NBP also assists in improving the productivity, and in sustaining the growing demand or telecommunication needs, among other things, to allow e-commerce processes. As there is a dire and urgent need to become world-class status of communication and multimedia arena, the NBP requires government-based efforts to achieve the outcomes. Besides placing the NBP under the RMK-9, the NBP has its own KPI for regional implementation (Ministry of Energy, Water and Communication 2006a p. 4-24).

In line with the NBP, one of the MyICMS 886 Strategy also includes providing programmes to create ICT awareness. These education and awareness programmes will gear society into easier adoption of the new knowledge (K-economy) and gives rise to Home Internet Adoption within the society. As an impact, online access to the Malaysian communities will be assured with regard to knowledge and information required at reasonable costs. In tandem with the impact of this strategy, there is a possibility of higher take up rate by internet and computers through the NBP which will consequently minimize the digital divide (Ministry of Energy, Water and Communication 2006b).

### **3 Methodology**

#### **3.1 Community Readiness to be Part of Cyber Learning Community**

A research was conducted using quantitative and qualitative research techniques where the data was obtained from users of telecenters in Malaysia. The research covered 556 respondents at 18 telecenters which were selected purposively in the peninsular Malaysia

##### **3.1.1 Survey**

Questionnaire was used as the main instrument to collate primary information about the community

readiness to learn online. The first part of the questionnaire is to elicit information related to respondents' background, their perceptions towards telecenters, infrastructure and facilities provided, benefits of the facilities and to what extent these centers meet their learning objectives and narrow the digital divide among the communities.

##### **3.1.2 Interview**

Supervisors and assistant supervisors who manned all telecenters were interviewed to obtain information related to their readiness to manage the centers, challenges, issues and activities planned and provided. Interview was also conducted with representatives of agencies involved in the telecenter projects.

##### **3.1.3 Observation**

Observation of the centers was conducted upon arrival at the sites to audit facilities, hardware, operational status and the usage pattern of consumers.

##### **3.1.4 Content analysis**

Documents analyzed include:

- a. Report and document on telecenter initiatives by ministries and agencies
- b. Research reports or document conducted by various agencies on telecenter specifically initiatives by ministries and agencies of the central government in peninsular Malaysia.

#### **4.1 Discussion of Findings**

The study found that the usage pattern of the telecenter facilities is significant as majority of the telecenter users are clear about their needs and the objective of the telecenters. Among the younger generations below 18 years of age, about 48.2 percent of respondents admitted that the purpose of their visit is to finish their school work such as preparing history or science project/portfolio. Meanwhile, others users which is about forty percent, said that they went to the telecenters to search for information and other activities. However, there are other users who went there to find entertainment materials, computer games and to communicate either via e-mail or chat room which percentage of users ranging from 32 to 38 percent. However, about 30-40 percent said that they visited the center to learn by taking basic training in computer applications, read news and upgrade their knowledge and literacy via searching for information activities.

Table 2: The Purpose of Using Telecenters

	YES	NO
School homework	48.2	51.8
Office work/official	16.7	83.3
Business	19.8	80.2
Basic training in computer application	37.0	63.0
Read news	30.0	70.0
Communication/Contact	32.8	67.2
Computer games	33.7	66.3
Entertainment	38.1	61.9
Searching for specific information	40.3	59.7
Others	25.3	74.7

### 4.2 ICT Applications Used

The study also found that there is a positive increase in terms of searching for information and surfing the Internet. Table 3 presents the percentage of users who utilized various applications the major ones are Internet surfing, followed by e-mail and entertainment or games which is around 47 to 67 percent. This finding is important because it shows that the telecenters with no charge or minimum rate for internet access help to increase the usage among the marginalize communities in Malaysia. Telecenters have helped many to venture into cyberspace and be part of the cyber learning.

Table 3: Types of Application used (%)

	YES	NO
Internet Surfing	66.8	33.2
Email	49.1	50.9
Office Suite	46.6	53.4
Graphic/Photo/Pictures/to draw	31.7	68.3
Finding information	38.8	61.2
“Chat”	24.3	75.7
Interest groups	30.8	69.2
Download software	30.2	69.8
Online service	21.5	78.5
Entertainment/Games	47.6	52.4
Others	18.8	81.2

### 4.3 Information Searched by the Community

In terms of information searched the emerging patterns which were found are stated below. The top five categories of information searched: educational materials, news, general information, job opportunity and

sports. However, this does not mean that other types of information are not relevant but the trends show that the communities are more inclined towards educational materials compared to others.

Table 4: Types of Information seeking (%)

	YES	NO
Education	60.2	39.8
News	46.8	53.2
General Information	41.8	58.2
Job Opportunity	32.5	67.5
Sports	33.3	66.7
Health	27.4	72.6
Gossip	28.2	71.8
Business	26.9	73.1
Politics	21.2	78.8
Others	22.4	77.6

### 4.4 Cyber learning Access

In order to get accesses to the cyber learning materials questions regarding the opening times of the telecenters were forwarded to the respondents and their answers vary. Majority felt that the opening hour of telecenters are suitable (86.3%) where 13 responded negatively and suggested that the telecenters should also be opened during weekends and after office hours. About 70 percent stated that they also knew about ICT literacy courses and participated (54%). Majority of the respondents also said that the present locations of the telecenters are suitable and only 15.3 percent thought the opposite and stated that telecenters at the Rural clinics are not really conducive for them and suggested the more telecenters at the rural libraries and community halls instead.

Table 5: Community Perceptions of the Telecenters

	YES	NO
The opening time is suitable	86.3	13.7
Know about courses in telecenters	68.7	31.3
Have you participated?	54.0	46.0
The suitability of the location of telecenters	84.7	15.3
Use computers at other places	53.5	46.5

In this study, attention is also given in obtaining feedback regarding the intensity of Internet use and computer in telecenters. Table 5 gives the impression that 53.5% of the telecenter users also use computer at other places. This gives the impression that local

community has the idea that the use of computer and the Internet is important in their daily lives. This inference shows positive effect of the telecenter program sponsored by government agencies. On the other hand, there is only about 35 percents who said that they rarely visited telecenters. This information shows that telecenters have successfully attracted local community's interest, thus bridging the digital divide in Malaysia and at the same time the access points for cyber learning to take place.

## 5 Conclusion

Thus it can be concluded that the interest, the facilities provided and the trends of use as reported in this paper are all supportive and positive towards cyber learning. The marginalized communities who are mostly at the remote areas and low income groups will be able to play a more active role in the e-inclusion activities if given the ICT facilities and infrastructure, being trained and exposed to the benefits of internet and ICT and assisted in upgrading their knowledge and socio economics. What is really needed now at the telecenters is a good collection of digitized educational materials which can be downloaded or stored in local servers for the community to use and learn even if they are not able to access internet due to the congestions and limited facilities. Studies on what kind of learning materials needed by various marginalized groups should also be conducted in order to produce learning materials which are relevant and useful for them. The provision of online materials for lifelong learning and a mechanism to calculate the learning time and informal learning to be converted into formal learning concept should also be discussed and practiced as proposed by Norizan Abdul Razak, Muhammad Kamarul Kabilan and Abu Daud Silong. 2007.. This mechanism will increase the participation for cyber learning and the fulfillment of lifelong learning for all principles and beneficial for all.

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