

Internet Usage in a Malaysian Sub-Urban Community: A Study of Diffusion of ICT Innovation

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Abstract

This article is about the diffusion of the Internet, an ICT innovation, in a sub-urban community in Malaysia. Introduced as a university service and then expanded by the Prime Minister's department, the internet was chosen to show how an ICT innovation diffused in a sub-urban community, in a country where the government plays a major role in promoting the use of the internet through various initiatives. Malaysia's internet development may spur other third world countries' ICT development as Malaysia is seen among them as a model. The study uses Rogers' diffusion of innovation theory (2003) to verify whether the innovation was adopted by the people and to what extent. Data for the study were collected through a survey involving 357 internet users, comprising public and private sector employees, college and university students. Results of the study show that the internet is now part of the respondents' lifestyle, and that the internet is second after the newspaper as a major source of information. Results also show that the respondents do a lot of information searching, pay their bills and conduct other online transactions through the internet. People in the sub-urban community generally accept the innovation. This study supports the diffusion of innovation theory, which says that an innovation perceived to have an added advantage, better than existing technology, would be adopted. The outcome of the study implies acceptance of public sector initiatives by the people.

Keywords: ICT, Internet usage, diffusion of innovations, sub-urban community, Multimedia Super Corridor.

Introduction

The internet was introduced in Malaysia in 1987 by the Malaysian Institute of Microelectronic Systems (MIMOS) through its RangKom project. RangKom, which stands for Rangkaian Komputer Malaysia or Malaysia Komputer Network, connects several universities in Malaysia, and as the experiment was successful RangKom was turned into an Internet Service Provider offering services to a limited number of members of the public in 1991. The following year, MIMOS launched Malaysia's first Internet Service Provider (ISP) called JARING. There are now nine ISPs in Malaysia.

MIMOS, which started as a unit in the Prime Minister's Department in 1985, played a key role in formulating and operationalising Malaysia's ICT initiatives. With MIMOS as the permanent secretariat of the National Information Technology Council (NITC), Malaysia began the big push towards achieving digital inclusion. The council formulated the ICT agenda (Abu Hassan & Hasim, 2009) for the country and set up the Multimedia Super Corridor (MSC) covering an area 750 km from Kuala Lumpur City Centre to Kuala Lumpur International Airport. The MSC, now in its third and last phase (2011-2020) will eventually cover the whole of Malaysia. MIMOS is now under the Ministry of Science, Technology and Innovation (MOSTI).

The MSC has seven flagship applications to enhance the socio-economic development of Malaysia: Electronic Government, Multipurpose Card, Smart School, Tele-health, Research and Development Clusters, E-Business and Technopreneur Development.

The availability of broadband internet and easy communication connections is an enabler and contributor to national aspirations and driver of national competitiveness as it speeds adoption, whereas slow connections cause user frustration and slow adoption (Mohd

Isa, 2009 and UNCTAD, 2004). Relative economic advantages enjoyed by early adopter nations drove the political will to allocate national resources to expensive broadband infrastructure development (Fortunato, Shuffstall, Poppiti, Sager, Bridger, & Alter, 2010).

The Malaysian government recognizes this economic advantage. One of the actions taken to make this a reality throughout the country was the establishment of the Cabinet Committee on Broadband rollout or CCB, chaired by the then-Deputy Prime Minister, Dato' Seri Najib Tun Abdul Razak. The committee set a target for 50% broadband penetration of households throughout Malaysia by the year 2010. By the end of 2010, this figure stood at 57% (Yatim, 2010).

Despite the increase in penetration, it is the urban areas which benefit more from this increase. There is still a disparity between the urban and sub-urban areas as far as penetration is concerned. Apart from the major cities like Kuala Lumpur, Johor and Penang, other areas of the country still experience low penetration.

Nonetheless, internet penetration is also taking place in the sub-urban communities mainly because of other public and private sector initiatives which aim at speeding the rate of diffusion, such as Telecentres, Internet *Desa* (village internet centres) and the distribution of free netbooks to low income households. Telecentres play an important role in bridging the digital divide in Malaysia and bringing about digital inclusion. Most of the centres have been established since 2005. These internet centres are maintained through sponsorships which they receive from different sources including the federal government, state governments, NGOs, the private sector including multinational companies (MNCs), individuals, and institutions of higher learning. Funding is available from federal and state government for computers and training, infrastructure and office equipment. While NGOs provide computers and training, institutions of higher learning provide workshop trainers, training and academic advice. Overall, the federal government of Malaysia contributed most to the operation of the internet centres (Ibrahim, Yasin and Dahalin, 2010).

Malaysia has made big strides as far as the adoption and use of the internet is concerned. This is obvious in the various governmental ICT initiatives such as the Multimedia Super Corridor (MSC) and the newly launched High Speed Broadband (HSBB) (Salman, 2010; *The Malay Mail*, March 2010).

The HSBB is a flagship project of the National Broadband Initiative and aims to boost the country's competitiveness. The national project, worth RM11.3bil (US\$1.00 = RM3.1), is a joint effort between TM, a Malaysian Telecommunication Company, and the government to develop the next generation high speed broadband infrastructure and services. Some of the initiatives include implementation of broadband community centres to provide services to 615,000 households in 246 locations with an allocation of RM60 million. The initiatives also comprise the building of people's internet centres in 138 Information Ministry premises nationwide providing broadband coverage to 400,000 users. E-kiosks will also be provided at community centres and sub-district offices in 1,105 sub-districts in the country with an allocation of RM40. There is a provision for public cellular coverage whereby 873 new telecommunication towers will be built, as well as 278 telecommunication towers in Sabah and 257 in Sarawak; channelling of RM1 billion from the Universal Service Provision (USP) programme through the agreement of service providers to provide notebooks to underprivileged students in the country; and a TM agreement to introduce broadband-netbook packages at reduced prices of RM38 (from RM50) and RM20 (from RM30) for USP areas.

Behind this ICT development in Malaysia is the Bill of Guarantee which has been seen as responsible for encouraging usage of the internet. The Bill of Guarantee No. 7 states that the government will not censor the internet. However, "this does not mean that any person may disseminate illegal content with impunity and without regard to the law (Rahim &

Pawanteh 2011, p.7).” Actions can be taken against contents that are deemed seditious, defamatory or contravene the Official Secrets Act. Malaysia as a multi-ethnic and multi-religious society is very sensitive to anything that may jeopardise the peace and harmony of the country.

Malaysia is experiencing a giant leap in her efforts to remain resilient as far as the National IT and Communications strategy is concerned. This is demonstrated by Malaysia’s 11th place ranking in 2008 in the Brookings Institution’s assessment of e-government readiness among 198 nations. Malaysia’s ranking was 25th place in 2007. This is an improvement in score from 36.9 to 42.8. Malaysia is thus amongst the most highly ranked e-government nations, a result of the public sector ICT initiatives (E-Government Global Ranking Study, 2008). This effort was nurtured during the era of Tun Dr. Mahathir Mohamad, the then-Prime Minister of Malaysia as Malaysia shifted its stance from engagement to containment (Hamzah and Hamzah, 2001). Malaysians in general are responding to this effort and the sub-urban community researched here in particular has embraced the internet.

This study used the diffusion of innovation theory to gauge how ICT innovation is diffused in a sub-urban community. The theory postulates that an innovation which is perceived to be better and has added advantage over the existing situation will be adopted. This is likely to be seen where the respondents in the sub-urban community adopt the internet as a means of communication via email, replacing postal mail.

This article presents a study of the diffusion of the internet among a sub-urban community on the east coast of peninsular Malaysia. In the context of this study, sub-urban is defined as an area where the population is smaller and there are fewer facilities than in urban centres. However, sub-urban areas have better facilities than rural areas. The aim of the paper is to study the various uses of the internet in this sub-urban community. The paper also looks into the nature and purpose of usage of the internet by the sub-urban community.

Diffusion of Innovation Theory

Diffusion of innovation depends on several factors and process. There are several studies of diffusion with Rogers’ (2003) being one of the most referenced studies on diffusion. For Rogers, adoption is a decision of “full use of an innovation as the best course of action available” and rejection is a decision “not to adopt an innovation” (p. 177). Rogers defines diffusion as “the process in which an innovation is communicated through certain channels over time among the members of a social system” (p. 5). Brown (1981) defines diffusion as the process by which change occurs whereby innovation spread from one locale or one social group to another. As expressed in these two definitions, innovation, communication channels, time, and the social system are the four key components of the diffusion of innovations.

Rogers (2003) described the innovation-diffusion process as “an uncertainty reduction process” (p. 232), and he proposes attributes of innovations that help to decrease uncertainty about the innovation. Attributes of innovations include five characteristics: (1) relative advantage, (2) compatibility, (3) complexity, (4) trialability, and (5) observability. Rogers (2003) stated that “individuals’ perceptions of these characteristics predict the rate of adoption of innovations” (p. 219). Also, Rogers noted that although there is a lot of diffusion research on the characteristics of the adopter categories, there is not enough research on the effects of the perceived characteristics of innovations on the rate of adoption.

In summary, Rogers (2003) argued that innovations offering more relative advantage, compatibility, simplicity, trialability, and observability will be adopted faster than other innovations. Rogers does caution, “getting a new idea adopted, even when it has obvious advantages, is difficult” (p. 1), so the availability of all of these variables of innovations speed

up the innovation-diffusion process. Research showed that all these factors influenced the likelihood of adopting a new technology (Anderson, Varnhagen & Campbell, 1998; Bennett & Bennett, 2003).

Diffusion theory helps explain why the respondents in the sub-urban community adopt the internet as part of their lifestyle (Brown, 1981; Rogers, 2003).

Methodology

This study used survey research to obtain data on adoption and usage of the internet from the sub-urban community population in Kota Bharu, a town on the east coast of peninsula Malaysia. This study used purposive sampling focusing on respondents who were already using the internet. Three sampling components were used; namely age, gender and occupation. The age component consists of three groups comprising 19-30, 31- 40 and 41+ year olds. To get equal representation of gender, the sample consisted of an equal number of males and females. For the occupation component, the respondents were categorised into four groups, namely government public servants, government linked companies, private businesses and college and university students. This avoided any one group of respondents dominating the data.

A questionnaire was used to collect data for this study. Some 400 questionnaires were administered among the sub-urban community members with the help of contact persons or enumerators, who were briefed about the questionnaires and data collection procedure. The contact persons were chosen based on the sampling components above. A total of 365 answered questionnaires were collected three weeks later, out of which 357 were usable, giving a response rate of 89.25%. The unusable questionnaires were incomplete as some of the questions were not answered.

RESULTS (data collected at the beginning of 2010)

Demography

Table 1 shows demographic profile of the 357 respondents. The male (50.1%) and female (49.9%) respondents are about equal with standard deviation of .500. Those interviewed were between the age 19 and 51. Most (67.8%) of the respondents are employed, either in the public or private sector with very few who are self employed (5.0%). Majority (45.5%) of the respondents hold high school qualifications, the Sijil Pelajaran Malaysia or SPM (the Malaysian School Certificate equivalent to the G.C.E. O' Level). Respondents holding bachelor's degree are the second largest (27.2%).

Table 1: Demographic Profile of the Respondents

	Frequency	%
Gender		
Male	179	50.1
Female	178	49.9
Total (N)	357	100
Age		
19 – 24	95	26.6
25 – 29	37	10.5
30 – 35	54	15
36 – 40	54	15
41 – 45	52	14.5
46 – 50	40	11.3
51 and above	25	7.1
Total (N)	357	100
Employment Status		
Employed	242	67.8
Self Employed	18	5.0
Students	97	27.2
Total (N)	357	100
Academic Qualification		
PhD	2	0.6
M.A. / M. Sc.	28	7.8
Bachelors	97	27.2
Diploma	55	15.4
SPM	159	44.5
Others	16	4.5
Total (N)	357	100

Looking at the respondents' household income (Table 2), the average household income is RM3000. This means the working respondents (260) can be categorized as belonging to the middle class in Malaysia (MAMPU, 2007).

The large standard deviation for monthly household income may be due to the large difference that exists within the respondents' monthly household income. Whenever there is a big or large difference in figures, in this case income, the standard deviation becomes large as well.

Table 2: Monthly Household Income of Working Respondents

Income (Ringgit Malaysia)	Frequency	(%)	Mean*	STDEV*
Below 1000	19	7.3	3566.69	2245.280
1000 – 1999	32	12.3		
2000 – 2999	68	26.2		
3000 – 3999	49	18.8		
4000 – 4999	23	8.8		
5000 – 5999	20	7.7		
6000 – 6999	23	8.9		
7000 – 7999	7	2.7		
8000 – 8999	10	3.8		
9000 and above	9	3.5		
Total	260	100		

* Overall means and standard deviation

Sources of Information for the respondents

Table 3 identifies the sources of information used by the respondents for their day to day information needs. Newspaper is the main source of information with 96.1% of the respondents using it as a source of information. This is followed by the internet (92.4%). Television closely followed the internet with 90.5%, and Radio is the fourth main source with 69.5%. This is an interesting discovery as the internet, over the years, has become a force to be reckoned with as a source of information for the sub-urban respondents, and this concurs with the findings of Bell, Reddy and Rainie (2004). This may be due to the dynamic and interactive nature of the internet (Wolak, Finkelhor, Mitchell, & Ybarra, 2088).

It is worth mentioning that the respondents had the liberty to choose or tick more than one source of information as stated in the questionnaire.

Table 3: Sources of Information for the respondents*

Information sources	Frequency	(%)
Newspaper	343	96.1
Internet	330	92.4
Television	323	90.5
Radio	248	69.5
Magazine	227	63.6
Book	199	55.7

* Respondents were allowed to choose or tick more than one source.

In the questionnaire the respondents were asked to rank the sources of information by writing 1 to 6 by the information sources. We have decided to remove this paragraph.

Computer Ownership and Usage

Computer ownership among the respondents is very high as 91% of the respondents have their own computers. Of the 9% of respondents who do not own a computer, a large portion (5.6%) use a computer at the office (Table 4). This is followed by 5.0% who use computers at cyber cafés. A criterion for inclusion in the research was that a respondent must have used a computer.

Table 4: Places Computers are Used – Percentage

Place	Frequency	%
Home	325	91

The following is for the 9% who do not own a computer:*

Office/college	20	5.6
Cyber café	18	5.0
Library/Computer Lab	8	2.2
Relative's home	8	2.2
Friends' place	6	1.7
Neighbour's home	3	0.8

* Respondents were allowed to choose more than one item

Internet Usage

More than two thirds of the respondents, 79% acquired their internet usage skills through informal learning. In the questionnaire informal learning is operationalised as self taught and learning from friends. Some 46.2% of the respondents have an internet connection at home. Of the 192 (53.8%) respondents who have no internet connection at home, 20.7% gave expensive monthly access as the reason. Some 21% said they have no telephone line. There are those who are afraid of their children being exposed to pornography, and they form 12.9%. The lack of computer at home is also one of the reasons as 10.1% said they have no computer at home. This does not mean that they do not use computer at all. Some of the respondents, especially the students use their computers or laptops at their colleges or universities. A small percentage of the respondents, 3.6% (13), think it is not very important to have an internet connection at home.

More than half of the respondents, 52.6% (188) have been using the internet for two to five years, 39.6% (142) have been using the internet for six to ten years; while 7.6% (27) have been using it for more than ten years. In terms of the nature of the usage, 63.6% (227) of the respondents said they had been using the internet on and off, while 36.4% (130) said their usage had been continuous.

The majority of the respondents, 62.8% (224) use the internet one to two hours a day, 20.7% (74) use it three to four hours a day. Thus, about 83% of the respondents use the internet one to four hours a day. Some 27.1% (97) of the respondents use the internet three to five hours a week. About one-third, 32.3% (115), of the respondents use the internet six to ten

hours a week while 13.4% (48) use it eleven to fifteen hours a week. Therefore, more than two-thirds (72.8%) of the respondents, use the internet 3 to 15 hours a week.

Another interesting finding is on the future anticipated usage of internet by the respondents. Some 41.2% (147) of the respondents said they will increase their usage, while 38.1% (136) said they were not sure. Some 17.6% (63) of the respondents said they will maintain their hours of usage. Only 3.1% (11) said they will decrease their hours of usage of the internet.

Of the six places where the respondents usually use the internet, 63.3% (226) use the internet at the office and computer laboratory at colleges or universities (Table 5). Some 53.8% (192) of the respondents use the internet at home, while 35.9% (128) use at cyber café. (It is a place where internet service is provided at a fee).

Table 5: Usual Preferred Places of Using the Internet

Place	Frequency	%
Office/University/College	226	63.3
Home	192	53.8
Cyber café	128	35.9
Friends' house or office	52	14.6
House of relatives	35	9.8
Neighbours' house	7	2.0

Respondents mainly use the internet for email, with 81.2% (290) of the respondents using it this way (Table 6). Email is followed closely by reading online newspapers and searching for information, 79.3% (283), while work-related usage is the third main purpose, with 62.2% (222) using the internet for this purpose. The least usage is shopping online as only 16.5% (59) of the respondents use the internet for this purpose.

Discussion

At the beginning of the 1990s, leading economies of the world began to realize the importance of information and knowledge as valuable resources, both nationally and within organizations (Ogunsola, 2005). The sub-urban communities of the developing countries are not left out in this information revolution (Harande, 2009). The sub-urban respondents in this study are also active players in the recent and ever-dynamic development in ICT, where the public sector provides the necessary support for the ICT initiatives such as Telecentres and Village Internet Centres (Ibrahim, Yasin and Dahalin, 2010).

Malaysia's internet development may spur other third world countries' ICT development as Malaysia is seen by them as a model. This is evident during the just-ended Langkawi Dialogue 2011, where most African countries present at the dialogue sought Malaysia's help in developing their economies (New Straits Times, 2011).

Table 6: Intent of respondents for Using Internet

Purpose	Frequency	(%)
Electronic mail (e-mail)	290	81.2
Reading Newspaper and Information Search	283	79.3
Work Related Usage	222	62.2
Education and Research	195	54.6
Social Communication (Chatting)	175	49.0
Electronic Government	169	47.3
Hobby/Games/Entertainment	162	45.4
Software Downloading	147	41.2
Health Information	145	40.6
Political and Religious Activities	143	40.1
Bill Payment	122	34.2
Holiday Arrangements	91	25.5
Money Transfer	72	20.2
Credit Card Payment	66	18.5
Online Shopping	59	16.5

Internet usage in Malaysia began around 1992, with the introduction of the first internet provider, Jaring. What started as a simple browsing and e-mail experience, has now turned into a mechanism for creative information dissemination (Ariff & Goh, 1998). The Internet has complemented the already-existing mass media and, as this study revealed, the internet is next to newspapers, at par with television, and has overtaken radio as a source of information. For the sub-urban community in this study, the internet serves as an alternative information source. Despite the introduction of the internet not long ago, most of the sub-urban community internet users said, apart from the newspaper, internet was the second main source of information for them. Interestingly, when the respondents were asked to rank the sources of information, television overtook internet in the second ranking for the respondents. Newspaper was ranked number one. Yet still, it is interesting to note that the internet has overtaken radio as the third ranking for source of information. This is a healthy development in the usage of the internet among the sub-urban community and attests to the fact that these communities have indeed caught up with developments in ICT and the internet in particular. The reason for this may be attributed to the nature of the internet which is seen as a storehouse of information where one can get information at the click of a button or mouse (Laudon & Laudon, 2000). Yet another reason might be the readiness of the sub-urban community respondents of this study to adopt new innovations, in this case the internet.

As a prerequisite for internet usage, computer ownership or access to a computer is very important. Though there are handheld devices that enable internet browsing, computers are still important for internet usage. The present study revealed that 91 percent of the respondents have their own computers. This is yet another indication of the level of usage of ICT by the sub-urban community.

The acquisition of internet skills among the respondents was also taken into consideration. The results showed that more than two-thirds of the respondents acquired their

internet usage skills through informal learning—self taught and learning from friends. One can deduce that the simplicity of usage of the internet did not require a formal training, thereby helping in the diffusion process. This finding coincides with the diffusion of innovation theory that innovations that are simple to use will be adopted. It also demonstrates the initiative and enthusiasm of the sub-urban community to adopt new technology.

The small percentage of respondents, 3.6% (13), who think it is not very important to have an internet connection at home might be in part those parents who are afraid of their children being exposed to immoral content online. This group of respondents and their children perhaps use the internet at work and other places such as universities and colleges, cyber cafes and homes of relatives as they are part of the usual preferred places of using the internet. The lack of internet at home did not affect the rate of diffusion of the internet among the sub-urban community as it did not affect their usage. As the result of the present studies showed, internet was used for a variety of purposes by the respondents indicating the high rate of diffusion. The sub-urban community in this study is widening its usage of the internet to cover various aspects of their lives. This ranges from education to work usage as manifest in the result. As the study revealed; use of the internet for work and education among the sub-urban community is noticeable based on the percentage of respondents who used it for this purpose. This finding is similar to that of Sexton, Johnson, and Hignite (2002) that job-related use of the internet is widespread.

Furthermore, some of the innovative aspects lie in the way the sub-urban community residents in this study use the internet in their daily lives. Among the innovative aspects of usage include education and research, electronic government, and health information. About half of the sub-urban community respondents use the internet for these purposes. The sub-urban community find the internet compatible, a characteristic of innovation, consequently adopting it in their daily lives and activities.

The trend in usage of the internet among the sub-urban community as far as hours of usage are concerned indicates they are moderate to heavy users of the internet (Statistics Canada, 2009). It is also evident from the study that future use of the internet among the sub-urban community is likely to increase. This is because about half of the respondents said they will increase their usage of the internet in future. This is yet again another indication that the sub-urban community has come to terms with developments in technology, especially ICT and this further helps the government's effort to get Malaysians to join the ICT bandwagon (Salman, 2010).

Another development in ICT usage, in the sub-urban community, is the increasing use of the internet as a communication tool. Email use has largely replaced the postal service, telegrams and faxes, and this fact is congruent with the observations of ICT scholars and observers (Ahmad, 2010). Though this is not surprising, as email was one of the first services made available on the internet, at the same time, the sub-urban community internet users need to be commended. The community has moved in tandem with developments in ICT use in Malaysia (Hashim & Becker, 2001). Gone are the days when we relied heavily on the postal service for communication needs. By the end of the 90s, the internet had reduced the reliance on postal service for communication, especially those involving mails, which are now replaced by emails (Nayab, 2010; OECD, 1999; Hiltz & Turoff, 1994).

Furthermore, the use of the internet as an information source has resulted in the sub-urban community respondents moving to the internet to read newspapers online. About 80% of the respondents read newspapers online. This is an indication that newspapers, which are not yet online, should move in this direction or lose the benefits of having an online presence. In the past years, major newspapers have declared bankruptcy, several big city papers have shut down, and many have laid off reporters and editors, imposed pay reductions, cut the size

of the physical newspaper, or turned to Web-only publication (Kirchhoff, 2010). Since 1999, almost 90 per cent of United States daily newspapers have been actively using online technologies to search for articles and most of them also create their own news websites to reach new markets (Garrison, 2001).

The use of the internet for work by the sub-urban community is also notable as about two thirds use the internet for this purpose. This attests to the fact that over the years since the introduction of the internet we have seen the gradual adoption of the internet into the lifestyle of the sub-urban community, even though they live in smaller cities and towns (Rangaswamy, 2007).

A large number of the respondents use internet to communicate due to the relative advantage of email over postal service. This might be one of the reasons for the adoption of the internet by the sub-urban respondents. The findings of this study correspond with Laudon and Laudon (2000) on the communicative advantage of the internet over postal services.

A mere 16.5 % of the sub-urban community respondents use the internet for online shopping. Looking at the nature of the sub-urban community, a lot of reasons might explain this. Perhaps the sub-urban community has not yet gotten used to the culture of online shopping. It could also be that they do not think online shopping is secure enough. Furthermore, from observation, the sub-urban community by nature is known for going shopping offline at supermarkets with the whole family as a way of spending time together.

Conclusion

From the results, the sub-urban community has adopted the internet as part of their lifestyle. This claim is obvious from the various uses to which the sub-urban community puts the internet. Among others, the sub-urban community members have adopted the internet for their work as about two-thirds use the internet in their work environment. Hence, they have found the internet to have added advantage, simple and compatible. These are characteristics which bring about diffusion of an innovation as postulated by Rogers (2003) and Brown (1981).

The steps taken by the sub-urban community in embracing ICT are consistent with public sector policy. This is also an indication that the sub-urban community members are active users of ICT. They are responding to call for Malaysians to get connected to the internet, and become active participants in ICT diffusion making them part of the network society (Salman, 2010; Barney, 2004).

Malaysia's internet development may spur other third world countries' ICT development. This is because Malaysia is seen by these countries as a model due to the advancement of its economy and ICT usage.

What could be the next stage in the use of the internet by the sub-urban community? Having access to the internet may not necessarily mean there will be no more gaps or divide in the subsequent usage of the technology. Scholars of new media have identified several factors which may inhibit the smooth usage of the internet, in what they term beyond the digital divide. Among the divides identified are the access divide (race, ethnicity, education and income), skills divide (technical competence and information literacy), economic opportunity divide (those with computer knowledge get jobs and rise in the ranks of their organizations) and democratic divide (Mossberger, Tolbert and Stansbury, 2003). For this reason, as a public sector innovation, the concern of the authorities and all stakeholders, should be on the next level of usage of the internet bearing in mind these divides (Hargittai, 2002). If the public sector fails to address these divides, initiatives such as the HSBB and others may not achieve their expectations (Teck & Lai, 2011).

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