The Impact of Wireless Technology Among Malaysian Society

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Abstract: - The applications of wireless technology in Malaysia started from the use of trunk radio carphone in 1978 moving to the use of pager in 1983 and progress very rapidly to the use of cellular GSM, CDMA, GPRS and EDGE technology. Since 2005 the use of 3G is becoming very popular in Malaysia. The introduction of wireless broadband since 2003 has also open up new channels for the access of internet anywhere anytime and anyplace at a very affordable price.This paper will discuss a study on the applications of wireless technology in two aspects: adoption and impacts of wireless broadband toward Malaysians. A total of 5130 samples were selected via stratified random sampling. The results of the survey show that there is significant impact on the applications and usage of wireless broadband among Malaysian at urban and rural areas and thus several strategies are highlighted to increase the penetration rate of wireless broadband in Malaysia.

Key-Words: - **Wireless technology, Wireless spectrum policies, Wireless broadband, Knowledge based economy, Knowledge society, Bridging digital divide**

1 Introduction

The applications of wireless technology in Malaysia started from the use of trunk radio car phone in 1978 moving to the use of page in 1983 and progress very rapidly to the use of cellular GSM, CDMA, GPRS and EDGE and since 2005 the use of 3G is becoming very popular. The introduction of wireless broadband since 2003 has also open up new channels for the access of internet anywhere anytime and anyplace at a very affordable price . Fig. 1 is the chart to show the progression of the applications of the wireless technologies in Malaysia.

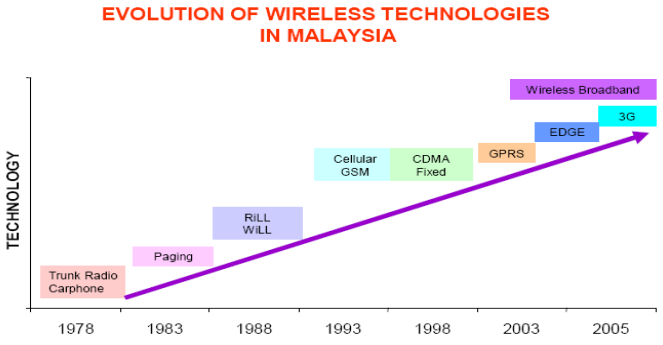

Fig. 1: Wireless Evolution in Malaysia

In 9th Malaysia Plan (9MP), ICT becomes the key determinant in the development process to position Malaysia as a competitive knowledge-based economy. To realize this, efforts are being made to expand the info structure such as advanced multimedia application, local content development, greater e-commerce adoption, and improved information security. In order to accelerate infrastructure deployment and improve ICT penetration to the general public, an overall implementation framework focusing on broadband connection and services is laid out in the National Broadband Plan (NBP). Higher allocation on ICT expenditure in 9MP as indicated in Table 1 shows that the government is serious in this matter *(Economic Planning Unit, 2006).*

1.2 Wireless Spectrum Policies

Under the NBP, the nation's 5 year ICT blueprint known as MyICMS 886 was developed. The blueprint emphasizes on placing high speed broadband infrastructure which will

spur high speed Internet connectivity anytime and anywhere regardless of whether the user is on the move or stationary. This infrastructure will bridge the digital divide among the rural and urban areas (*KTAK & SKMM*, 2006).

2 The Research on Wireless Technology

The objective of the research is firstly to identify the pattern of use, adoption and value of wireless technology among Malaysian society at urban and rural areas. As we know in bridging digital divide, we have to look at three factors. The first factor is the access where we have to look at where and how the community at large is accessing the internet and for this research in wireless environment. Secondly, is adoption when Malaysians already have access to internet, what do they apply it for, and does internet gives added value to the Malaysian society and the other part is the benefits and value. *(Economic Planning Unit, 2006)*.

2.1 Research Methodology

We used Stratified Random Sampling calculated based on data of Population, Household and Living Quarters. The selections of the samples went through a very complex procedure. The first level is via Stratified Random Sampling while at the second level clustered sampling were applied and at the level of enumeration blocks and living quarters and respondents selections simple random sampling using table of random numbers.

From the urban population, the total number of samples is 4135 whereas from the rural areas 995 samples were identified. The method of data collection comprises of Survey, Face-to-face interviews and Focus group interviews and the data collected related to social demographic characteristics of the individuals such as gender, marital status, age, technology usage, access of internet as well as wireless technology owned and used. The next level is on the application of wireless technology itself. Then, the impacts of wireless technology related to the education sector, social sector, health sector and also business sector. The last part is on the value the wireless technology offers and user acceptance of broadband and their satisfaction level were sought.

The data analysis had also gone through to a very rigorous method. Descriptive data where frequency and percentages were calculated and T-test to test the significant differences in means between the urban and rural area for impact. The use of chi-square is to test association between stratum and demographic profile. Other than that, reliability of the questionnaire was calculated and the alpha value of all the impact sections are 0.9 and above which is considered as very reliable. Factor analysis was also applied which confirmed the structure of the interrelationship (correlation) among 31 variables of the impacts towards the Malaysian society. The confidence level was set at 95%.

2.2 Socio-Demographic Profiles of the Respondents

Overall at rural areas 47.4% respondents are female and 52.6% are male and similar pattern is seen at urban where more male samples compared to female 55.2% and 44.8% respectively.

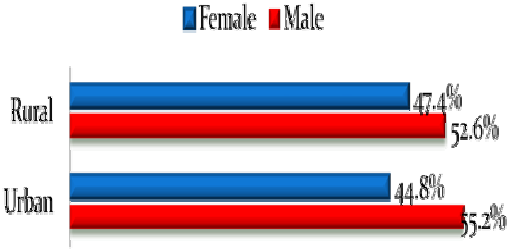

Fig. 1.1: Gender of samples

For age groups majority falls under the age group of 20-29 years old

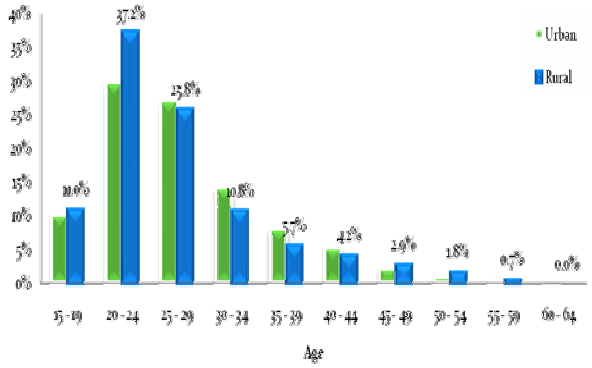

Fig.1.2:Distributions of sample according to age.

2.3 Findings -Adoption of Wireless Technology

It is very encouraging to see 43.8% of urbanites own laptop but lesser percentage at rural area with about 34.7% only. Thus, for access, the highest reason given by respondents on why they get online wireless is for education purposes, getting new information so that they can make informed decisions. This fact confirmed that Malaysians at large have information seeking behaviour and our aim towards knowledge society can be expedite with development of digital content for all age groups *(Norizan Abdul Razak et al. 2009).*

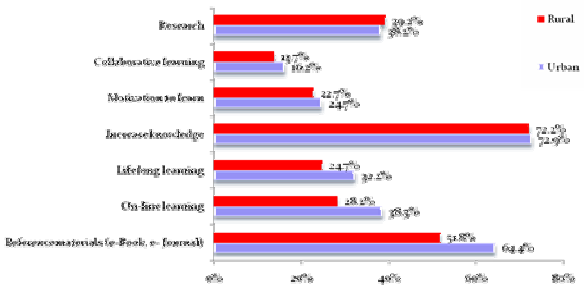

Fig.1.3:Applications of Internet via wireless broadband

In terms of work related task, majority of the respondents use wireless broadband to send and receive information or data and communication among staff, and clients. As for leisure, majority download and upload songs, ringtones, games, films and videos on you tube as well. During the interview sessions we found among the favourites is downloading of Korean and Indonesian movies. Besides, respondents also access internet via wireless broadband to read newspapers. Writing blog is still not as popular yet but increasing. On the applications of social networking tools like MySpace, Facebook, Friendster we found that the networking tools are gaining popularity even at the rural area as adoption rate is about 59%.qw

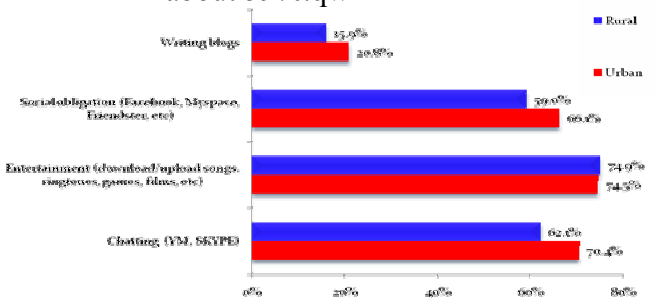

Fig.1.4: Applications of Internet for leisure

However, the trend of accessing internet via wireless broadband for safety reasons is still not encouraging. It is because for supervision purposes, the gadget used such as CCTV is still quite expensive for the general public to own. In terms budget and service provider of choice majority stated that they are comfortable with Rm 50-Rm 100 per month to subscribe broadband and Celcom is at the first place, followed by Maxis and TM Net. However, Packet One, U-Mobile and Digi are also gaining popularity among the urban and also the rural areas.

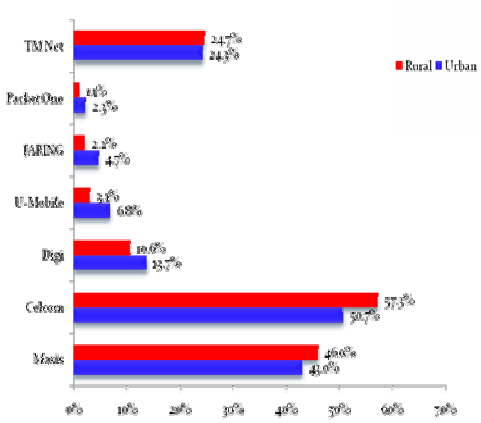

Figure 1.5: Service providers of choice

2.4 Impact of the Wireless Technology among Malaysian Society

Analysis using factor analysis with varimax rotation for the 31 items of the impact of wireless technology and the four factors show 67.24% of the variance which is considered good. In terms of rotated factor loading, there are four factors which are education, social, business and health and all items are of high value. In the analysis of impact of wireless technology towards Malaysian society, we found there is a significant difference in means between the urban and rural areas in all areas: education, social, business and health.

In general section, the highest impact of using wireless broadband, the respondents are able to communicate with friends, partners and colleagues at anywhere, anytime and anyplace. Then, followed by item being aware of current news and issues as well as item to download data at anywhere and anytime. The bench mark that we use in order to create this index is 70 and above as good impact index whereas 75 and above as high impact index. Thus, the high impact of wireless broadband to help Malaysian community to communicate and to be up-to-date with the current issues.

For education purposes, increasing general knowledge - 78.7 index, is the highest impact and this confirmed that Malaysians have the information seeking behaviour which is very encouraging. Other high impact factors are: item 2 increasing skills towards the use of technology and item 8 that enabling the user to use the different applications of technology. For social purposes, item 6 in the questionnaire shows that the Malaysian society want to be updated with the current news and information so that they can make informed decision anywhere, anytime and anyplace. In terms of business productivity, the highest item is easier online transactions . In terms of health purposes, the index appears a little bit lower compared to the other categories. The highest index is just 72.2 since we did not find any items with index of above 75.

3 Strategies for higher penetration of wireless broadband

3.1 Strategies for higher adoption of wireless broadband lifestyle

In order to have higher broadband penetration rate by 2010 in Malaysia, the subscription rates should not be higher than RM 50 for the rural and urban communities. Different strategies should be employed to tackle the different age group and generation gaps –generation X, Y and Z. Benefits and give back value similar strategies employed by mobile phone service providers (free sms) should be introduced. Rates should be attractive enough (below Rm 50 per month for rural communities and RM 50-RM 100 for urbanites) and computers and laptops should be made lighter, cheaper

but with needed facilities provided. Campaigns on the benefits of internet and secured e-transactions should be given to all. The data also reveal majority of the respondents access the internet from home because they do not have wireless facilities so they use broadband to access internet by sharing laptops with their children. In addition, they also access internet at restaurant, at office as well as at university, colleges and etcetera. Some of them do access the internet via broadband at the e-community center which is known as telecenter.

There is an need to set up new community broadband centers (CBC), but the utilization of CBCs among the respondents to access internet is still quite low. Thus initiatives to increase the utilization of broadband at CBCs or other telecenters is by making them WIFI enabled. Laptops for rent and own at a very affordable rate such as Rm 50 per month for the duration of 2 years can also expedite the broadband penetration at the rural and higher utilization of the CBCs. As to increase the e-participation rate, the public must be made aware of what technology can contribute to their daily life. Increase ICT rate and literacy of the use of wireless technology, secured e-transactions and empowering oneself via e-entrepreneurship and lifelong learning should be planned. Awareness campaign and training of e-entrepreneurship should be done at all the CBCs telecenters *(Norizan Abdul Razak et al. 2009).*

4.0 Conclusion

Improve infrastructure and facilities at both urban and rural areas. Even though the urbanites are very lucky because they have almost all places covered with WIFI facilities and Broadband access, but the hotels are still charging highly those who want to go online at their premises. In order to have higher penetration of broadband, policy should be formulated and regulated on free access at hotels, and other public premises. Improved facilities at the Community Broadband Centers (CBC) for the marginalized communities is very commendable. More hot spots and WIFI covered areas should be planned at public premises at urban and also rural areas

Educating the society on the use of internet for empowerment. Internet access should not just be for communication and leisure but also for empowering the urban poor and the rural communities economically and socially. Activities online should go beyond downloading Korean movies or uploading videos at you tube. Campaigns in collaboration with the universities and industries should be planned. University involvement in the community development can be enhanced and go beyond the traditional programs such as visiting and academic talks.

References:

[1] Economic Planning Unit (2006*). Ninth Malaysia Plan (2006-2010),* The Economic Planning Unit, Prime Minister Department, Putrajaya,http://www.epu.jpm.my/rm9/html /english.htm (February 19, 2008)

[2] KTAK & SKMM (2006). *The National Broadband Plan: Enabling High Speed Broadband under MyICMS 886*, Kementerian Tenaga, Air dan Komunikasi & Suruhanjaya Komunikasi Multimedia Malaysia, 2nd Edition, August 2006.

[3] http://www.skmm.gov.my/

The Malaysian Communications And Multimedia Commission (July 18th 2009).

[4] Malaysian Communication and Multimedia Commission. *Information paper: License application procedure and licensing criteria,* http://www.skmm.gov.my/what_wedo/licensing/cma/pdf/Licence%20ApplicationCriteriaPaper.pdf (June 29th 2008).

[5] Norizan Abdul Razak, Zaini Amir, Mahamood Ismail, Suhaidi Hassan 2009. *Final Research Report of The Impact of Wireless Technology Among Malaysian Society.* MalaysianCommunication and Multimedia Commission. Cyberjaya. Malaysia