Broadband Solutions for the Last Mile to Malaysian Residential Customers

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INTRODUCTION

Broadband is a term that describes the Internet as a function of high-speed data connections and large bandwidth. The Federation Communication Commission (FCC) defines broadband service as data transmission speeds exceeding 200 kilobits per second (Kbps), or 200,000 bits per second, in at least one direction, either downstream or upstream. Its fundamental ability to bring about change in the socioeconomic fabric hinges on it being a medium for greater amount of data transmission. Briefly, high capacity bandwidth allows greater amount of information to be transmitted which is the essence of all applications and communications. It is widely predicted that Internet through broadband will quickly penetrate the residential markets that is in line with the National Broadband Plan (NBP) that focuses on infrastructure readiness and market penetration, expediting the rollout of broadband using both fixed and wireless access.

The first in the list of 10 National Policy Objectives as stated in the Communications & Multimedia Act (CMA) 1998 reports the aspiration of turning Malaysia into a communications and multimedia global hub. Hashim (2006) states that a secretariat has been formed to roll out the NBP to ensure its success and to achieve the 10% of the population by 2008. Indeed, one of the fundamental strategies to accomplish such a vision is to put in place an efficient **broadband network** and ensure sufficient subscription to the services.

Broadband is different from conventional dial-up services due to its many enhanced capabilities. It provides access to a wide range of Internet services and applications like streaming media, Internet phone, online gaming, and other interactive services. Many of these current and newly developed services are "**bandwidth hungry**," thus requiring large amounts of data transfer at excessively fast speed, which may not be technically feasible with dial-up service. Therefore, broadband service may be increasingly necessary to access a full range of services and opportunities beyond what a dial-up service could potentially offer.

Many residential customers who have been using traditional dial-up have been migrating to broadband. The constantly connected Internet accessibility remains another lucrative benefit for broadband converts as compared to the dial-up technology. Broadband technology does not block phone lines nor requires one to reconnect to the network after logging off. The dedicated connection for the user translates into less delay in transmission of content. A faster connection speed could allow users to access a wide range of resources, services, and products.

BROADBAND ADOPTION FACTORS

In order to determine the best way to accelerate broadband usage, one must understand the different factors that contribute to the adoption of broadband among Malaysian residents. A 4C model (i.e., cost, content, convenience, and confidence) has been identified to explain broadband adoption in the following discussion.

Cost

The most obvious factor limiting broadband demand is cost. Some consumers believe that broadband is a workplace technology with little value outside the office. Price factor is determined by the type of speed package required by the user and of course, the type of subscriber equipment that is related to the service by the user.

The Malaysian Communications and Multimedia Commission (MCMC) conducted a survey with the objective of addressing user gaps on core attributes and current trends on the use of Internet in Malaysian homes. The samples of the survey covered 4, 925 Internet users of private households (both dial-up and xDSL users). The survey also covered the reasons for not engaging in Internet usage based on 2005 nonuser households. About 14% of respondents said that high price is a factor that prevents them from subscribing to broadband. Many attractive packages has been introduced by the application service providers (ASPs) in order to increase broadband penetration and targeted mostly at residential users. Discounts and rebates on top of lucrative prizes are used as bait to increase broadband user base. Cheaper and newer access technology has been introduced to reduce the operational cost, which will indirectly reduce the price of broadband services. Yun, Lee, and Lim (2002) state that "low prices induced by fierce competition created remarkable demand for Internet access in Korea," (p. 22) and fast and reliable connections support with low cost are the preferred broadband features.

The survey results also show a large portion of respondents mentioned that their broadband subscriber are from the no-income category and the monthly subscription fees are being paid by their parents. This is an evident that broadband users are mostly students.

As suggested by Horrigon (2006), the strategy to increase broadband subscription rate in conjunction with maintaining existing users as customers can be extended to students, owing to these newcomers directly utilizing broadband connection without going through the dial up phase.

On the other hand, approximately 45% of respondents who are broadband user groups are from the average monthly income group (RM 1000 - RM 3000). Since many broadband users access on average of 4 hours per week, narrowband is much preferred due to user's limited variety of application needs. The survey result shows that about 70% of respondents do not exceed 15 hours of Internet usage per week. For them, narrowband charges based on dial up concept is still much economical compared to broadband subscription.

Content

Barriers to greater adoption of broadband includes reluctance to embrace change, lack of relevant local content, lack of reading ability, and lack of appreciation for the possibilities made available by broadband access. Based on the survey, about 80% of residential users are still reluctant to switch to a broadband connection. This can be justified by identifying that only about 50% of Internet users took approximately 12 months to upgrade their connection.

Almost more than half of the Internet users surveyed are young and single. Hence, contents (e.g., movies, music, and games) targeted for the younger generation should be made available with other entertainment and interactive media.

According to the survey by MCMC, e-mail application tops the list of activity (>70 %), followed by education and research activities and information finding about goods and services, each with over 40%. Online newspaper and magazine reading, utilizing interactive chat rooms and playing online games are about 20% each of the total respondents.

Convenience

In addition to concerns over price and lack of sufficient content, potential broadband users are expressing concern over deployment hassles and lack of plug-and-play equipment. Customer complaints like application service providers making customers wait at home all day or require multiple trips by the service technician to install the technology effectively at the customer premise appear to influence narrowband consumers' decisions to not adopt broadband.

More than half of the respondents are satisfied with the current narrowband or dial-up services that they are using. ASP's role should be aggressive enough to ensure that broadband access is erected at residential areas where lots of potential markets are in place. For instance, residential areas near educational institutes, industrial areas, or metropolitan cities are good targets.

Based on the analysis conducted, residential users of broadband connection in Malaysia will increase from 440,000 subscribers in 2006 to 3.9 million subscribers in the year 2010. That is approximately about an 800% increase compared to the current broadband subscription rate in Malaysia. Harada (2002) states that strategy and development of broadband should be establish at a national level.

Various easy installation packages such as the Streamyx-in-a-BOX (SIB) package that hinges on the easy **plug-and-play** concept that is being launched by