The Provision of High Speed Broadband (HSBB) in Malaysia in Enhancing Malaysian Access to Internet Applications: A Case of Telecom Malaysia

Mohd Yusof Kasim*, Marzura Abdul Malek**, and Zainalabidin Sebli Hambali**

Vice Chancellor*, Lecturer, Business School**

Asia Pacific University College of Technology and Innovation (UCTI), Malaysia

Abstract

The study analyses the introduction of the High Speed Broadband (HSBB) in Malaysia that will enhance the usage of the new media in stimulating the access for information and other internet applications. This is parallel to the advance in the Information, Communication and Technology (ICT) that will continue to create an edge among the society. For Telekom Malaysia (TM), project HSBB encompasses of building the infrastructure, creating awareness among the public and as the service provider of this new technology.

The application of mass communication theories and concepts as a good and effective communication is imperative in convincing the society to embrace a new technology. Based on the media effects research on **diffusion of innovation theory**, the adoption of any new ideas or new technologies can be seen from a similar pattern of an S-shaped curve to determine the level of adoption based on the Diffusion of Innovations (Everett M. Rogers, 1983). As this is a new technology, the success of this project depends on the degree of importance and its relevance to the society. The **uses and dependency model** (A. Rubin & Windahl, 1986) suggested that there exist a certain elements in the media system such as the individual differences and the structure of the society, which can cause the society to select that particular medium of communication.

This conference paper endeavours to deliberate the communication process used in TM HSBB Project in their efforts to convince Malaysians to accept this new technology. The deliberation will also identify a more effective and realistic way in getting the society to embrace this technology in a short period of time.

The research methodology used in this study consists of both primary and secondary data collection. The primary data was solicited from 100 TM HSBB Corporate users within Klang Valley business districts via the Simple Random Sampling method. The secondary data is obtained from Telekom Malaysia, the corporation awarded by the government of Malaysia to carry out the High Speed Broadband (HSBB) project. Supplementary secondary are also obtained from the Ministry of Information, Communications and Culture, Malaysia.

The findings of this study denote the degree of acceptance of HSBB among the Malaysian society. This study also provides the communication framework for Telekom Malaysia as the service provider of this technology and to enhance the Government policy in the area of multimedia in the new media era.

KEYWORDS: new media, high speed broadband, communication process, Diffusion of innovation theory, Uses and Dependency model.

Introduction

Malaysia is located in one of the most aggressive economic regions in the world, Asia, that in order to create a continuous competitive edge locally and within the region, Malaysia needs to prepare itself to face one of the most challenging times where the economy is concerned. This is due to the rise of new market segments and potential economic growth in the region such as Thailand, Cambodia and Vietnam competing in areas of cheap labour and raw materials.

The situation is intensified with the presence of advanced technology in areas of information, communications and technology (ICT) which not only affect the region but also at the global level. What more with the popularity of the new media on the rise, Malaysia needs to move forward and to continue to be competitive in the business world, by creating a platform that will prepare itself for both the rapid changes in the communication technology and to fill in the gap using the advance developments in the communication technology. This can only be done with the presence of the appropriate infrastructure that will expedite the whole process of communication which will be a very important aspect for the economy of Malaysia in today's borderless world.

The link between communication and the business world cannot be denied. The exchange of business information is made easy 41 years ago with the introduction of the Internet and today we see the Internet penetrating in every aspect of our lives. Malaysia sees that by introducing a broadband with a faster speed will be an asset not only to the business world but also to the nation in general. It is the vision of the government to close the digital gap and create a digital-knowledge nation.

Being in a highly economic competitive region, competing with countries such as Singapore, Indonesia, Thailand, India and China, the government of Malaysia has realised the important roles of technology in attracting foreign direct investors in its trading industry. This can only be carried out with the fullest participation from the nation. In realising this, issues related to demands of the HSBB service generate questions such as what is the level of acceptance among the society and how can this level be improved?

This research aims to determine the level of acceptance among the society on the HSBB Project, enabling the identification of effective ways in influencing the society. To the best understanding of the authors, this research is the first of its kind in Malaysia that involves the study of the communication process in introducing a new technology.
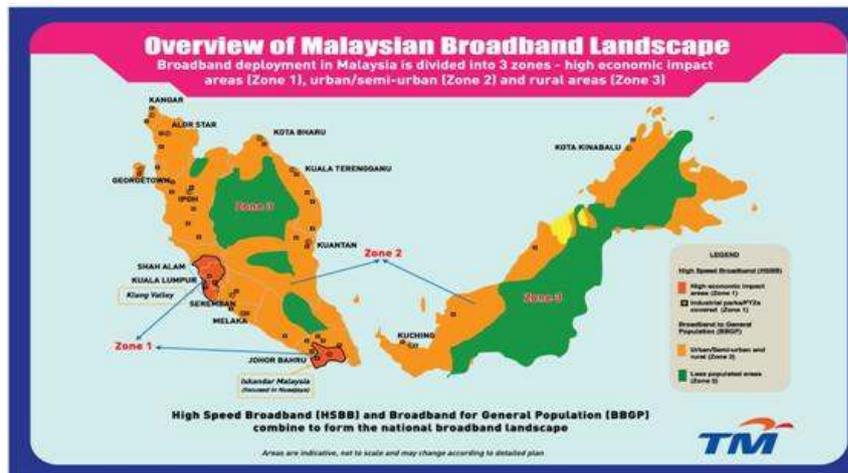
Chart 1. Overview of Malaysian Broadband Landscape (Source: TM)

Broadband is a technology offering consumers a fast and easy access to Internet applications, creating a better lifestyle and increase productivity. The demand of the usage in Internet applications has resulted into a heavy traffic flow among the users hence slowing down the process of retrieving information. Previously, a capacity of 2 megabit (MB) was sufficient but due to the rapid emergence of technology evolution in communication, there is a need for a greater bandwidth and infrastructure, increasing the present bandwidth to 4 MB.

In September 2008, the government has given the task of installing the infrastructure with a greater bandwidth to Telekom Malaysia (TM), a project costs USD350 million. Why TM? There are several reasons for this. Historically, TM was just like any other telecommunication companies in the world, giving services in telephony. They have laid the foundation of the telecommunication network by installing new fibre optics for the purpose of a greater capacity in bandwidth makes sense for TM to carry out this project. The fibre optics installed are not only at the main network but there are installed right up to the doorstep of the households, making it a very costly project.

Another reason for awarding this project to TM was because TM has the widest broadband subscribers at around 800,000 due to its *Streamyx*[1] broadband services.

Even at the time this paper is written, aggressive efforts are being made by the Malaysian Government nationwide to create a healthy competition among various internet service providers (ISPs) by offering

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[1] STREAMYX is a broadband service offered by TM which comes in package options. There are five options and these options differ in download and upload speed.

broadband access with affordable prices. Just like any introductions of a new technology, the issues surrounding the society cannot be ignored. Questions like "How will the society buy this technology?" and "How can we expedite the process of influencing the society on the importance of the high speed broadband?" are two of the critical questions which need to be addressed.

In view of the high expectation of the government to see that this project goes through, it is important for TM to investigate on how well the society is adopting to this technology as there is no guarantee that TM will be making profits from this project. This is due to a lot of uncertainties which include the number of users that will use this new genre of utility.

Research Framework

The constructs used in this paper combines the study of conceptual models and exploratory study on broadband adoption in Malaysia with the assumptions that the independent variable of HSBB adoption depends on the degree of importance and its relevance to the society (A. Rubin & Windahl, 1986). There are some certain elements in the media system which may cause the society to choose a particular medium of communication. According to the **uses and dependency model**, the society has its own needs in adopting a new technology, in this case is the broadband services, and that these needs may be based on five integrated constructs.

1. Utilitarian Outcome

As the need to be mobile grows, people tend to be creative and flexible in how and where they work. BSG (2004) and Lal and Dwivedi (2008) suggested that this can be made possible by using the broadband where work can be done effectively according to one's lifestyle that a broadband with a faster Internet access will easily be adopted by this group of people. This category defines the need of the Internet applications in households which include information or product search, online home businesses and office work (Venkatesh and Brown, 2010).

2. Hedonic Outcomes

Venkatesh and Brown (2001) define this category as the pleasure derived from the consumption of the Internet activities or applications. The purpose of these activities is to get entertainment from the online games, online radio, streaming audio and video and many others. The potential

entertainment from the computer is more enhanced by the advent of the Internet, with characteristics leading to reality escapism and immersive in a new media environment.

3. Social Influence

This category looks into the perceived influences from friends and family in subscribing to the broadband internet services (Taylor and Todd, 1995; Venkatesh and Brown, 2001). The social influence that plays an important part in 'selling' the idea of the high speed broadband includes conversations and messages. These became the primary influence in forming the perception of broadband adoption as more and more people are into the social networks such as twitter and facebook (Venkatesh and Brown, 2001).

4. Self – efficacy

This construct highlights the perceived ability or skill of the Internet users without the assistance of others (Taylor and Todd, 1995; Venkatesh and Brown, 2001). As the objective of this project is related to the economy, TM mainly focuses on the economic areas in Malaysia such as the Klang Valley and industrial zones such as Bayan Lepas, Penang; Kulim High Tech Park, Seberang Prai and Bintulu Industrial Zone, Sarawak. These are the areas with the highest Internet users due to the nature of the business and lifestyle of the society.

5. Resources

The close relationship between the perceived high cost of getting the broadband services and the perceived resources accentuate further the importance of communication in creating a true image of the broadband services. If this service is to be considered as a public utility, the monthly subscription fee should be made affordable for the people.

The survey carried out in South Korea recognises an affordable monthly fee as one of the most important factor in determining the rate of adopting the broadband services (Lee and Choudrie, 2002) while the exploratory study carried out in the UK demonstrates how a high monthly fee can be a major barrier in the adoption of the broadband services (Dwivedi e*t al.*, 2003).

To understand further the rate of adoption of the broadband services, findings will be compared with the **Diffusion of Innovation Theory** where there exists a similar pattern of determining the level of adopting a particular new technology. Based on this theory, Rogers (1983) suggested that

there exist five categories in the society that will determine the success of this new technology. The five categories are:- Innovators, early adopters, early majority, late majority and laggards.

Rubin and Windahl (1986) developed the uses of dependency model with the following definition on dependency, "given particular structures of societal and media systems, individuals seek personal and mediated channels or messages to gratify felt needs, motives or desires'. In other words, due to personal and mediated behaviour, the public may be lead to dependency on a particular medium or usage of some functions of the media.

Kats, Blumler, & Gurevitch (1973 – 1974) and Rubin (1986, 2002) state that from the perspective of the uses and gratification, individuals choose a certain media based on their goal, and that this choice satisfies one's social and psychological characteristics. No matter how effective is this chosen medium, some changes in behaviour are expected.

The advancement in ICT has created the need to change the way information is retrieved, used or manipulated using the new media technologies. Wilbur Schramm (1964), Daniel Bell (1974), Alvin Toffler (1980) and Ithiel de Sola Pool (1983) envisage a radical social transformation to take place as the result of the new media technologies, creating an 'information society'. This is the direction of the government of Malaysia where in order for it to be an 'information society', the adoption of the new media technologies which can create an increase in personal freedom, reduce social hierarchy, enhance leisure and greater quality of social interaction and communication (Flew, 2002), Malaysia first and foremost need to establish a good broadband infrastructure.

Research Methodology

The data collection for this study was obtained from secondary sources, TM itself, which involves the subscribers of *Streamyx,* from business consumers. The survey instrument used was based on explanatory survey, a process to determine the level of factors affecting the adoption of HSBB services. Questions were asked during interviews with 100 corporate users in the Klang Valley which is the high economic impact zone in Malaysia. Apart from these interviews, online feedback was also considered and contributed towards concluding this study.

Additional secondary data collection was obtained from the Malaysian Communication and Multimedia Commission in determining the basic information on HSBB and the present status of this project.

As the number of respondents is relatively small, the analysis of the findings was done in a simple and manually manner, where minute details have been taken into consideration. These details include observation on emotional aspects such as customer satisfaction and customer behaviour.

The purpose of the exploratory survey was to determine items or factors that are affecting the adoption and non-adoption of the HSBB service. The finding analysis of the study was conducted based on the Diffusion of Innovation theory and the Uses and Dependency Model. The result of the analysis is then translated by way of working backwards i.e. from the 'end-result' stage to the 'planning' stage. The 'end-result' stage is when the nation has accepted the HSBB technology during the shortest time possible which will be determined by the 'planning' stage.

Finding and Analysis

Table 1. Background of Respondents – By Industry

	INDUSTRY TYPE	NO. RESPONDENTS
1	Education	5
2	Telecommunication	5
3	Logistics/ Forwarding	6
3	Entertainment	7
4	Media (Radio & TV)	5
5	Advertising	3
6	Food (Retail)	5
7	Event Organising	5
8	Consultancy (Engineering)	7
9	Hospitality	10
10	Automobile	5
11	Fashion	2
12	Real Estate	5
13	Medical	3
14	Food (Manufacturing)	10
15	IT	5
16	Biotechnology	3
17	Travel Agency	5
18	Transport	4
	TOTAL	**100**

The overall findings from the interviews conducted show that 90% of the respondents are satisfied with how the information on HSBB was disseminated by TM which was mostly done through its websites, television and radio advertisements and strategic events such as the Launching Ceremony, carnivals and publicity through promotions.

The summary of the findings is shown in Table 2.

Table 2. Summary of Findings

CONSTRUCTS	FINDINGS
Utilitarian Outcome	All respondents agreed that HSBB is good for business as business can be operated effectively.

Hedonic Outcome	60% agree that business and pleasure (entertainment from the Internet) should be made accessible to the employees.
Social Influence	70% agree that the subscription of HSBB is based on what others say about the service.
Self-Efficacy	Small and medium businesses are mushrooming in Malaysia especially in online businesses. HSBB plays an important role to the success of these businesses where all aspects such as marketing, product pricing and online ordering are made possible in a short frame of time, anywhere in the world and at anytime of the day. 90%
Resources	98% agree that price plays an important factor in determining to subscribe to HSBB service. The respondents were able to justify the need for this technology with the service subscription fee.

These findings are compared to the **S-shaped curve** found in the Diffusion of Innovation theory shown below.
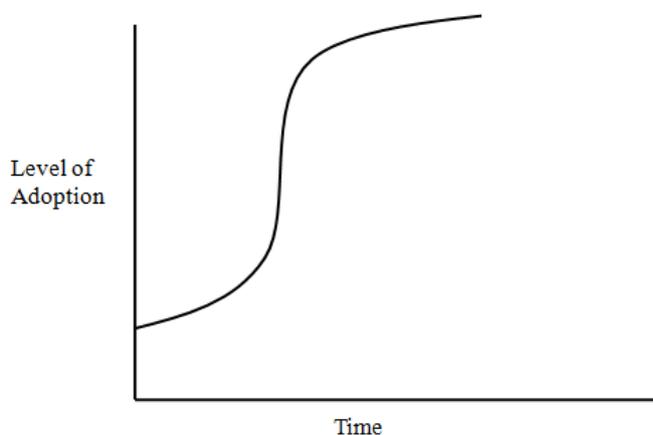
Graph 2. Classic diffusion curve

(Source: Adapted from Diffusion of Innovations, by Everett M. Rogers, 1983).

The completion of the HSBB Project takes place when majority of the people has 'bought' the HSBB technology in the shortest time possible. The findings also show that once the relevance of the HSBB technology to their business is proven, it is easier to break the barrier of rejection towards this technology.

This is emphasised further from the findings where social influence play an important part in decision making in adopting the HSBB technology where Rogers (1995) classifies five adopter categories exist in the society. These groups are the innovators, the early adopters, the early majority, the late majority and the laggards.

The findings also show that television plays the most effective way of getting the information on HSBB across to the respondents. This is due to the creative visuals and storyline which relates to success stories in the business world. Furthermore, the fact that these messages were brought to them either by the Government or TM, a government linked company (GLC), creates a certain 'air' of ingenuity that relates to contributing towards the community, hence fulfilling the corporate social responsibility. This becomes the pulling factor for the respondents when choosing television as their medium for gaining information.

This platform of using television as the medium in disseminating information on HSBB has indirectly create a higher degree of curiosity on how to maximise this technology to be successful in business. From the findings, this curiosity leads the respondents to choose TM website on HSBB as the next choice in gaining information about this technology.

Conclusion and Recommendation

The findings conclude that the current platform of using aggressive television advertisements and documentary programmes to create awareness on the HSBB project is proven to be effective as the target audience which consists of educated and business-minded people from the high economic impact zone, appreciate and recognise the need to embrace the ubiquitous way of doing business. The high level of acceptance on the HSBB services among the existing TM customers who are the Early Adopters will play a significant role in the society in influencing more people to adopt this new technology.

These findings are in line with the Diffusion of Innovations Theory which postulates that Early Adopters find it easy to imagine, understand and appreciate the benefits of a new technology, and can relate these potential benefits to their other concerns.

It is hoped that the HSBB project will also support the 1Malaysia Concept and spur the economy in congruent with the launch of the New Economic Model by the Prime Minister. As to date, the project is concentrating in Zone 2, the urban and semi-urban areas.

Changes in the following aspects are recommended to ensure the success of this Project for other zones:-

1. There is a need for a reduction in the subscription fee as this will expedite the adoption of this technology.

2. To create a more attractive package that will not only attract the existing customers but also potential customers. Currently the existing packages are differentiated by the capacity of the broadband width.

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Contact Information: *datukyusof@ucti.edu.my, marzura@ucti.edu.my; zainalhambali@ucti.edu.my*