

## **Conclusion and Recommendations**

### **5.1 Conclusion and Implication**

The current study aims to investigate the relationship among few constructs namely perceived usefulness, perceived ease of use, social influences, personal innovativeness toward Information Technology and intention to adopt WiMAX among working adults in Klang Valley using Master of Business Administration students in University of Malaya as convenience subject samples. Few hypotheses were drawn and verified using Confirmatory Factor Analysis before the start of the research in order to capture all possible causal relationship of the factors that may affect adoption of WiMAX. The empirical data collected in the study drawn a few conclusions which will have further impact in understanding the important factors affecting the adoption of WiMAX and hence achieving the objectives of the current research.

The perception of usefulness and ease of use of WiMAX can be significantly attributed to the influences from the individual's social network i.e. friends and important acquaintances. Information that is passed down by the significant individuals in their social network will have great impact on a person in decision making. Positive comments that are made about certain product or services will definitely be taken into consideration while trying to decide on which product or services to be adopted. The same will therefore apply for WiMAX technology. The information about the usefulness and ease of use of the WiMAX technology that is passed down by significant people will be easily digested and accepted by potential adopters of WiMAX. Individuals with significant social status who adopt WiMAX will bring about adoption by their admirers, friends and family members. Employers who adopt WiMAX will also directly affect their employees to adopt WiMAX. This is an important point to be taken into consideration in future attempts of promotional

efforts to increase adoption of WiMAX. The target group of promotional effort should include owners of companies, entrepreneurs, politicians, leaders etc. Free trial services can first be offered to these groups of people with hope of them adopting the WiMAX and later promoting the service to their family, friends and subordinates. Promotional packages can also be offered to them, like family packages and company packages with lower subscription rates than when subscribing alone will further boost the adoption not only by themselves but also the people around them. In this modern era, humans also stay connected via social network services like Facebook, Twitter, LinkedIn and blogs. They also depend a lot on these networks to equip themselves with latest information needed. If further promotional efforts were to target these social network services, it will definitely enhance the outcome of the promotions. Technology savvy bloggers are also good target group for promotional efforts. From these networks and bloggers, potential users of WiMAX are able to gather information regarding the ease of use and usefulness of WiMAX. This will also further increase the adoption of WiMAX.

The Malaysia government is putting in a lot of effort to promote this new technology in the country as part of their effort to make Malaysia a “developed” country. One of the strategies involves transforming the Malaysia nations into the technology savvy and “well-informed” lot. As part of the strategy, through Malaysian Communications and Multimedia Commission (MCMC), 4 licenses were granted to industrial players to deploy WiMAX technology in Malaysia in 2008. The government had set targets for these companies to ensure 25% population coverage by each of the company by 2009. As shown in the research, once again we emphasize that social influences have impact over adoption of WiMAX via perceived ease of use and perceived usefulness. Therefore, if leaders of the country use the technology, this will definitely bring about a big change in the era and lead to adoption of WiMAX by the nation automatically. Therefore, this can be used as a

promotional point to enhance adoption of WiMAX in the country. WiMAX can be made the preferred broadband service provided to all leaders in the country and this will directly affect the population to adopt the technology as well.

The perception of higher social image and social status that come about with adoption of WiMAX also encourage adoption of the technology. Everyone aims to be considered “somebody” in their social cycle. This particular attribute should be well manipulated as another strategy to increase WiMAX adoption. WiMAX services should be packaged as “the in-thing” and “the must-have” by the network providers. This will then affect people to use the technology to stay connected within their social networks and not being left out just because they do not adopt the technology. This particular strategy has been proven successful in all promotional efforts during marketing of products and services. Therefore, the outcome for adoption of WiMAX technology should also be the same.

The results from the empirical data do not support the hypotheses that social influences directly affect adoption of WiMAX. Instead, results from the study shows that social influences have direct positive impact over perceived usefulness and perceived ease of use. While both perceived ease of use and perceived usefulness in turn have direct positive impact over intention to adopt WiMAX. This shows that potential users do not simply adopt the WiMAX technology blindly just because other individuals in their social networks adopt it but will only do so after gathering information about the usefulness and ease of use of the technology from their social networks. This information emphasizes the importance of recognizing potential social influences that can affect WiMAX adoption to make sure investment that is made towards the technology will be fruitful. The WiMAX technology should not only be “packaged” to be usefulness and easy to use. It should also be able to perform and meet the requirements of the end users. Therefore, continuous

researches into ways to enhance and further develop the technology should always be carried out. This will then ensure adopters of the technology continue to have confidence that the technology is indeed useful and easy to use and by adopting the technology will bring about change in their life. WiMAX should always be deemed a user-friendly technology that bring about convenience and not cause users more problems in their already stressful and busy schedule. WiMAX providers should never lack in this particular aspect, as if negative comments are to be made of the technology or services it provided, these comments will circle in the social networks and will adversely affect the adoption of WiMAX.

Personality trait of innovativeness was hypothesized to affect the adoption of the WiMAX technology. This particular construct was initially speculated to affect adoption via indirect paths through perceived usefulness and perceived ease of use of the technology. Besides, the construct was also hypothesized to affect adoption directly. However, analysis from the data gathered from the current study confirmed that personal innovativeness has a positive impact over perceived usefulness of WiMAX but failed to demonstrate its impact on perceived ease of use. Neither did the analysis showed that it will directly affect intention to adopt the technology. In other words, this particular variance in individuals will only influence the perception of usefulness of the technology and further motivate them to try WiMAX. The analysis failed to support the difference in the individuals in terms of innovativeness will change their perception of ease of use of WiMAX neither will it change the chances of adopting the technology per se. However, this situation will take a change if some efforts are made to motivate this particular group of people to use their innovativeness to prove that WiMAX will indeed be easy to use and useful. For example, incentives can be offered to promote innovation of devices, content and applications that will highlight the benefits of WiMAX. This type of lucrative offer will definitely stimulate

this particular group of “innovative” individuals to discover the benefits of the WiMAX technology and later to adopt it as well.

Even though the statistical analysis of the data failed to show that intention to adopt WiMAX is directly influenced by social influences and personal innovativeness, intention to adopt the technology will change if social networks suggest that the system is easy to use and/or useful and if the personal motivation change the view of usefulness of the system.

The intention to adopt WiMAX is greatly influenced by an individual’s perception of ease of use and usefulness of the system. This is clearly demonstrated from the analysis of the data collected from the cohort of students in Master in Business Administration in University of Malaya. This is an expected outcome of the study as for many individuals information technology that is easier to use and that will bring about enhancement in work and daily life will definitely be more popular and more readily adopted. This particular outcome of the study once again confirmed the theoretical value of Technology Acceptance Model (TAM) and Technology Acceptance Model 2 (TAM2) in explaining innovation adoption within the limit of the study.

Perceived usefulness of the WiMAX technology is shown to be a very important factor affecting the intention to adopt WiMAX. This expected outcome of the research should be adequately manipulated to ensure continuous penetration of the technology to the population of Malaysia as wanted by the government in the effort to make Malaysia a developed country. Various strategies can be deployed to target this particular aspect. Grants or incentives can be offered for development of applications that can be useful in improving our daily life. These applications should carry the criteria of advanced technologies, up-to-date and able to bring changes in self and organization management even while they are always on the go. In order to fulfill these criteria, these applications will definitely require high bandwidth to run smoothly. Besides that, as mentioned earlier,

this particular strategy can also trigger the innovativeness of some individuals and further discover the usefulness of the WiMAX technology and subsequently adopt the technology. Then, users of these applications will leave with no other choice but to adopt the latest technology in terms of internet access services. At this moment of time, this is none other than WiMAX.

Perceived ease of use is the other important factor that will bring about the intention to adopt WiMAX as once again shown in the current research. People living in this modern era are always out on the field, trapped in the human race. Life is stressful and work schedule is always packed leaving them hardly any time to spend for leisure. To these people, time is very precious and has to be used wisely and should not be wasted with difficult to use applications and services. As another promotional effort to enhance adoption of WiMAX, it should also be made easy to use with no hassle involved. The WiMAX service should be made easily available and accessible anytime, anywhere. Therefore, we propose that partnerships can be made with major shopping complexes, government agencies and public areas to make WiMAX broadband service available at their premises and therefore encourage people to use the service. This will greatly increase adoption of WiMAX. Besides, partnership can also be made with major educational agencies like universities and colleges by offering special packages with better rates to the students to increase usage. The students are the young generations which will later become the driver of the country and by targeting this group of users, will ensure further future adoption of WiMAX.

Perceived ease of use will also has an impact over perceived usefulness of WiMAX as gathered from analysis from the empirical data gathered from this study. The respondents perceived that WiMAX will be useful if it is easy to use. This particular relationship is also an expected outcome of this study as naturally, an easy to use system

will make its usage more users friendly. The hassle free usage of WiMAX will make it more useful and readily adopted. As mentioned earlier, people of the modern era could not afford to waste their time unnecessarily on complicated and not so user-friendly services or application. The WiMAX providers should always make sure that users of their services would have no reason to stop using WiMAX and therefore ensure continuous support of their services.

The attempt to include social influences to the theoretical value in Technology Acceptance Model (TAM) in trying to explain adoption of WiMAX in the current study is fruitful and helped to explain further the construct that will affect adoption. This study also helped to affirm many previous studies who tried to prove social influences as a valid factor in affecting adoption of an innovation. This behavioral attribute is a known factor in our daily life involving many decisions we make in life. “Word of mouth” is recognized worldwide as a very important source of information whether in a developed or developing country like Malaysia.

From the business point of view, it is important to recognize all the attributes of a successful implementation of an innovation to ensure monetary returns. In this context, all the factors that will enhance adoption of WiMAX should be recognized. Within the limit of the study, we are further enlightened with the contributory factors that will bring about successful adoption of WiMAX in Malaysia. This will greatly assist wireless service providers to come out with strategic plans to ensure maximum adoption of the system. Social influences, perceived usefulness and perceived ease of use are proven to be important contributors to adoption of WiMAX. Even though, this study failed to show that personality trait of innovativeness will directly affect WiMAX as mentioned, it is important to remember that innovativeness will prompt an individual to perceive the system useful after self exploration and experimenting the system. This will in turn make them adopt the

system after perceiving it to be useful. Therefore, further research is recommended in this particular field to further understand the relationship between personal innovativeness and adoption of an innovation.

The world is becoming borderless with the advancement in information technology. People stay connected anywhere and anytime of the day. Information and news travel across the world within split seconds as a result of innovation after innovation. WiMAX will further enhance the spread of information in the wireless way. With the innovation of various wireless mobile hard wares, there is pressing need from all parties including users and network provider to come out with efficient ways to ensure smooth “delivery” of information across the world. WiMAX is definitely one of the ways. Therefore, it is once again important to ensure maximum adoption of the system via better understanding of the various contributory factors for adoption.

With the advancement of information technology as well, it has now become a common requirement for various organizations to be using technological innovation to ensure competitiveness among their peers. It is important for these organizations to adopt the latest technology especially with this wave of wireless technology brought about by WiMAX. Moreover, handheld devices such as smart phones and tablet devices are becoming more inseparable for individuals in this fast developing country of Malaysia in accordance with what is occurring in any developed countries. It is also now considered to be an unavoidable organizational trend to be working with these devices. This current situation should be manipulated by WiMAX provider to ensure adoption in the organizational level. As can be gathered from this study, social influence is an important attribute towards WiMAX adoption. Spreading positive adoption experiences among informal networks will also indirectly complement the adoption of WiMAX in the organizations. Personal innovativeness is also shown to affect perceived usefulness of

WiMAX and therefore it is also recommended that implementation programs involve tactics to trigger potential users' motivation to try the innovation and later to adopt it as well.

The providers of WiMAX should be aware of the fact that social networks are important source of information for potential adopters of WiMAX. Therefore, this group of “informers” should be the target for promotional programs to market WiMAX. Incentive can be provided to this group of information provider for every new user of WiMAX that they brought about to further ensure the success of WiMAX implementation.

As the current study involved only a small group of respondents, it is recommended that more researches be employed to further verify the results of the current study. As the respondents of this study are students of post graduate level, it is expected of them to be the well-educated and matured group. No teenagers are included in the study even though it has been reported that WiMAX is commonly used by this group of users. There is also no data of available of the less educated group of potential adopters as well. Further research is also recommended to clarify this aspect to ensure a more holistic adoption of WiMAX among people from all walks of life.

## **5.2 Limitations and Recommendation for Future Study**

Although the research has reached its aims, there were some unavoidable limitations. This research was conducted on a small size of population who were attending the Master of Business Administration in University of Malaya. Therefore, to generalize the results for larger groups, the study should have involved more participants. Future study can be conducted in larger and wider population size instead of only targeting Master of Business Administration students in University of Malaya. The future research should target participants from all age groups to include teenagers, working adults and the senior

citizens. Only with this wider coverage of survey participants will then allow a more accurate research result to reflect the actual scenario.

Secondly, this research was conducted using the convenient sample of Master of Business Administration students of University Malaya. All the respondents are of the highly educated lot. The results from the current study may be biased and may not reflect the actual scenario. Therefore, we propose future research be extended to cover Malaysians from all levels of educational background. With the understanding of the factors that will affect adoption of WiMAX among potential users can then provide valuable information for future promotional efforts. Targeted promotions catering to the people of various educational backgrounds will then ensure more successful outcome.

The current study replicated the study model from Lu et al. (2005) which includes a few constructs namely perceived usefulness, perceived ease of use, social influences and personal innovativeness towards information technology which were also validated from previous researches. Future study could probably be done exploring other possible factors than the already existed to further understand the factors that can affect WiMAX. One possible way may be to include open ended questions to the questionnaire that was used in the current study to enable respondents to give their opinion regarding other factors that can affect their adoption of WiMAX. With this, we can hope that other factors that can affect adoption of WiMAX can be taken into consideration ensuring better penetration of the technology in the nation.