

# Acceptance of Converged Mobile Phones Among Users in Malaysia

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## **Abstract**

*The main challenge in mobile technology design is no longer how to develop handheld devices with the necessary data processing power, but rather the many different and innovative ways of using and interacting with technology when users are on the move. With media convergence, new forms of media use have emerged: users can enhance a media encounter by controlling the streams of information and have the ability to interact with not only the media itself, but also the content provider and other users. Malaysia, like any developing country has always been very responsive to the latest developments in the media and the Malaysian government has implemented various development plans as well as promoting human development, especially in today's environment of social and economic change. Malaysia is the second highest mobile penetration in South East Asia after Singapore and it has 28 million mobile phone users, which is a penetration, rate of 1.1 phones per citizen. In addition around one third of Malaysian is 3G subscribers by 2010 and youth people are among the heavy users. The mobile phone is viewed as an important communication tool and has become an integral part of the Malaysian society. As Malaysia is seeking to its aim to be a developed country in near future, so easy accessibility to information and communication technologies are considered as an important criterion for a developed country. Based on different studies, it is concluded that the development of convergence mobile devices are accepted by Malaysian users and the increasing in the number of mobile users and 3G subscribers with high penetration rate show the positive position of modern facilities and new technologies in this country.*

**Keywords:** communication technologies, development, malaysia, mobile convergence, mobile user

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## **Introduction**

The enormous potential of information and communication improvements such as satellite and telecommunications systems and the computer based communication network, the Internet, is indeed a good luck for people (Alsagoff and Hamzah, 2007). The use of complicated wireless communications devices has been growing exponentially over the past decades in line with the requirements of high speed communications. These include the use of mobile phones as well as the unregulated installation of WLAN access points (AP) at home and public places (Ismail et al., 2009).

One of the debates in the shaping of wireless futures, and perhaps the vaguest challenges, is over what the technology actually offers to end users. It is obvious that there are two main value propositions for two markets: Rich Voice and Mobile Internet. However it is also clear that these services represent two complementary regimes for understanding the market, the role of network operators within it, and the improvement environment for business and technical change. These

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regimes are those of the Internet and Telco world who are following each other, drawn to the vision of Internet and mobile phone convergence (Stewart, 2004).

Mobile information technology is currently under control by cellular phones, personal digital assistants (PDAs) and laptops, although different handheld technologies inherit features from each other so that different electrical devices are actually converted into one device. The main challenge in mobile technology design is no more how to expand handheld devices with the essential data processing power, but rather the many different and modern ways of using and interacting with technology when we are on the move. The feature that really allows users to carry out desktop tasks in a mobile setting is the opportunity of connecting to the internet using wireless technology. This is the first step towards an information technology culture of 'anywhere, anytime' (Nilsson, Nuldén and Olsson, 2001a). Even though consumers wish to buy handsets with the most features for the same price, these features are hardly ever used to their full potential (Lindholm, Keimonen and Kiljander, 2003).

### **Mobile's Generations**

The rapid developments in technology, advancements in communications and mobile technologies and the rise of digital media is considered as one of the major movements which have penetrated and reformed media landscapes universal (Henry, 2007). Wireless mobile communication networks have been experienced four generations of change until today.

The first generation (1G) wireless mobile communication network was analog system which was employed for public voice service with the speed up to 2.4kbps (3GPP, 2002). The second generation (2G) is based on digital technology and network infrastructure. As compared to the first generation, the second generation can support text messaging.

The accomplishment and the growth of demand for online information via the internet encouraged the development of cellular wireless system with improved data connectivity, which ultimately lead to the third generation systems (3G). Third generation systems refer to the developing technology standards for the next generation of mobile communications systems. One of the main objectives of the standardization efforts of 3G is to produce a universal infrastructure that is able to support existing and future services (Li et al., 2009).

The 4th Generation (4G) wireless mobile internet networks are research interests in academy, which combines current existing 3G cellular networks and Wi-Fi (i.e., Wireless LAN) networks with fixed internet to backup wireless mobile internet as the same quality of service as fixed internet, which is an advancement not only to move beyond the restrictions and problems of 3G, but also to improve the quality of services, to enhance the bandwidth and to decrease the price of the resource (Al-Shawabkeh, Salleh, and Li., 2007).

The Fifth Generation (5G) wireless mobile internet networks are real wireless world system and are designed for World Wide Wireless Web (WWWW) to mobile users based on network access management. The sixth generation (6G) mobile communication networks can integrate satellite communication networks and 5G to make global coverage. Satellite communications networks consist of navigation satellite networks, telecommunication satellite networks and Earth imaging satellites networks. The 7G system can be supported by the global navigation satellite system, the telecommunication satellite system, the earth image satellite system and the 6G cellular system. The global navigation satellites systems are essentially determine a use's position (Li et al., 2009).

Currently, there are several technologies each able of performing some of the features such as broadband data access in mobile, or nomadic environments, and supporting voice traffic using voice over IP (Santhi and Kumaran, 2006). What 4G will bring forward is the capability to have

all these features on an integrated technology platform enabling compatibility between various technologies. In a survey which has done by Randeni and Parthiban in 2008, shows that users are very keen about the changes that 4G networks will bring to them. They took the respondents' attitude and use a cost model to conclude that 4G networks will indeed be successful in Malaysia.

### **Defining of Convergence**

The expansions and growth of new wireless access technologies has to be put in the perspective of the continuing convergence phenomenon that started in the 1970s, but really came to the fore in the 1990s when interactive network multimedia based on the dispersion of the personal computer, and the technical and market success of the Internet model (Stewart, 2004). Media convergence points to utilization of digital and mobile communications technologies to create and send content in multiple mediums for multiple platforms, which is accessible virtually anywhere, any place and any time (Walker, 2009).

In other words, convergence of the communications technologies therefore means that all communications technologies are all converging into 'common computer readable, digital form' (Alsagoff & Hamzah, 2007). Convergence would have developed from the pure hardware convergence, into a multilayered technological convergence, constructed of three different layers: device convergence, Network convergence, and service software convergence (Cardoso, 2008).

With media convergence, new types of media usage have emerged: users can increase a media encounter by controlling the flows of information and have the ability to interact with not only the media itself, but also the content provider and other consumers. Technical developments have also resulted in affordable off-the-shelf manufacture equipment. Today it is most likely easier to set up a worldwide accessible radio station on the Internet than it is to get employment in a traditional radio station (Nilsson, Nuldén and Olsson, 2001a).

With convergence of media new types of use develop. The users are now able to use media by controlling the stream of information and they have the opportunity to interact with not only the media, but also with the provider of the content and with other users (Nilsson, Nuldén and Olsson, 2001b). The growing phenomenon of mobile information technology (IT) is becoming increasingly important to consider mobility as an element of media convergence and mobile media as a new research field.

Mobile technologies are also able to assemble, generate and convey content in ways and forms outside of their traditional sphere. The Internet is often used as a platform to feature text, audio and still images, animation and video (Ketterer et al., 2004).

### **Mobile Convergence Development in Malaysia**

Malaysia has been reforming and improving the telecommunications and broadcasting sector since 1987. The participation of the private sector in the transformation and development of the country's communication infrastructure has ensured the required information infrastructures and work on wiring the country with the necessary information infrastructure have been actively carried out for more than a decade (Alsagoff & Hamzah, 2007).

Malaysia, like any other developing countries has always been very responsive and active to the latest developments in the media and on the other hand, Malaysia government has applied various development plans as well as supporting human development, especially in today's environment of social and economic change. Malaysia has also been particularly paying special attention to the rapidly changing world of information and communication technology but at the

same time is aware of the effects of the information gap or the digital divide in the Malaysian society (Alsagoff & Hamzah, 2006).

Global communication has facilitated infrastructures for the communication of data, news and images and thus enhanced the wish for the ownership of products and access to services. The globalization of communication at a global level, but also at a local level by allowing different people within the very same community to share issues and subjects, is probably the most important novelty of the current changes brought through communication to the daily life (Cardoso, 2008).

The mobile phone world still has plenty of room to expand. Globally, the number of mobile phone users is expected to rise from 2.7 billion in 2006 to more than 5.4 billion by 2012, according to Informa Telecoms & Media (2010). Malaysia is the second highest mobile penetration in South East Asia after Singapore. According to Robin Hicks (2009), the SMS in Malaysia is massively popular with the younger generation and it is proving an successful and effective way of reaching out to the rural areas. Malaysia has 28 million mobile phone users, which is a penetration rate of 1.1 phones per citizen. The country's mobile users have also been eager in their adoption of SMS, with the researcher reporting that Malaysians sent 73 billion text messages in 2008 (Vod Pod, 2010).

In a study conducted by Yeow and Balakrishnan (2008) indicated that Malaysian teenagers were also found to have a higher texting satisfaction as compared to those who are in their twenties and thirties. This can be attributed to the fact that they are more satisfied with speed, learnability and special character selections. Their higher levels of satisfaction towards these three factors have resulted in them being more satisfied with their texting experience using their mobile phones.

Other than the mobility offered by mobile phones, the plans and packages offered by the telecommunication companies (telcos) also play very major roles in contributing to this growth. Telcos tend to lower the tariffs with respect to the competition pressure amongst them (The Star, 2008). This makes mobile phone services cheaper and affordable even for low-income groups, and then increases the demand of the service. Ismail (2009) could meet the increasing demand of mobile phones users by deploying more mobile phone base stations in the country, especially in main cities such as Kuala Lumpur, Penang and Johor Bahru.

Mobile network technology such as 3G, GPRS and Edge are similarly on the rise. The first 3G implementation four years ago only covered certain areas such as the Klang Valley, Penang, Johor Bharu and Mallaca. Later, the service expanded to another industrial, commercial and tourism areas such as Genting Highlands, Kulim Hi-Tech and Sungai Petani. The momentum of mobile network technology and communications also affected mobile phone and personal digital assistant or PDA usage. As a portable communication device, mobile phone and PDA play a big role in communications (Salim, Arifin, & Puade, 2010). According to Razak et al., (2010) the use of 3G in Malaysia is becoming very popular since 2005 and 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.

Various studies have been done to find out the mobile acceptance among Malaysian users. An article by Yapp and Khalid (2006) mentioned that "SMS still king", because Malaysians still prefer the SMS over the more advanced mobile communication services that are available in the market because it is cheap, fast and convenient. The given statistic in sending SMS in Malaysia shows how people dependent on mobile technology and its services. Another study indicated that mobile phone ownership is so common among Malaysian urban students and working adults, it

facilitates working parents in checking where their children are and in monitoring what they are doing, thereby mounting their satisfaction with mobile technology (Monk, 2004).

According to a research conducted by Ravendran (2002), the other services that Malaysians are interested in include accessing email, downloading music, information services, banking or investment related activities, wireless gaming, directory services, location based services, video-conferencing and streaming video. It means any facility which is provided by mobile phones is using by Malaysian people and they are interested in any single of them.

In another study, Zulkefly and Baharudin (2009) believed that today, mobile phones are equipped with other features that bring additional communication and entertainment such as the Short Message Service (SMS), MP3 (MPEG-1 Audio Layer 3) player, games, internet and videos. These additional features attracted people across all walks of life including the younger generations, and accordingly led to increase in the number of mobile phone users in Malaysia.

Based on different plans the Malaysian government aims to become knowledge society. The accessibility and affordability of both local and foreign content is an important contributor to achieving this national aim. Access to local and foreign content everywhere in an affordable manner can increase productivity and enhance knowledge. In addition, Malaysia needs to build trust with the public in using new forms of networked content in a safe and secure manner, in order for new access technologies to become widely utilized (Alsagoff & Hamzah, 2006).

Based on Malaysia-Telecoms statistic (2010), around one third of Malaysian, 9.2 million people, are 3G subscribers by 2010, it means they have access to wide-area wireless voice telephone, mobile Internet access, video calls and mobile TV via their cell phones. This statistic reveals that 3G or 3rd Generation of mobile phones has its own place among users and is common enough in Malaysia.

The growth of the communications industry in the country is also strengthened by demand for new services arising from the convergence of the information technologies in the field of switching and transmission such as ATM, ISDN and SDH has created new services like VOD, video conferencing and many other multimedia applications on the web like graphics, audio and animation, video and virtual reality to mention a few (Alsagoff & Hamzah, 2006).

The given statistics shows that the mobile phones' permeation in Malaysia is vast and they are looking to have more access to different facilities which have been provided by cell phones and mobile in Malaysia is not a simple tool only for voice communication. The convergence of mobile phones and the Internet, high-speed wireless data access, intelligent networks, and pervasive computing - will shape how we work, shop, pay bills, flirt, keep appointments, keep up with our children and even conduct wars.

In a study (Abdullah, 2004), Malaysian youths claimed that owning a mobile phone is a vital factor of their life. This is not surprising as the younger generations are digital natives (i.e., individuals born in the technological era) and will naturally be easily attracted to any new technological equipments and gadgets. The younger generations furthermore, took the mobile phone not just as a simple tool for communication but, also as a way to utter and express their feelings (Ito and Okabe, 2004).

In another survey has been done by Yeow and Balakrishnan 2008 indicated that younger users are also keener in learning and fast in adapting to changes, especially in the use of new technologies. In addition a similar example was observed in among their adolescent respondents who experienced learning new technologies with greater enjoyment and pleasure than adults (Fortunati, and Magnaneli, 2002). Meaning, younger users may have more time or intend to learn as opposed to older mobile users.

In other studies have done by Abdul Karim et al. (2009) in Malaysia, which attempted to investigate the pattern of wireless phone use by the Malaysian society through the conceptual work of appropriation and adoption process at two different levels (adoption and appropriation). They have found that at the adoption level, most of the users decided to use the wireless phone for the first time due to usefulness and easy to use functions that allow for communication, usefulness and easy to use for work requirement, influences by others (social influence), gift, and other functionalities that are of values to users. In addition this study could adjust with another study which has done by Venkatesh et al., in 2003.

Further important findings of the study by Abdul Karim et al. (2009) in Malaysia has shown how the diversity in each cohort groups, namely age and gender lead to different adoption and appropriation criteria in this study. The report shows how these cohort groups vary in how wireless phone is being appropriated in terms of principles of use. On this basis, the research allows for the characterization of MP agreement and appropriation according to age and gender, which therefore further enhance previous findings on the influence of these individual characteristics in MP utilization as well as other related technologies by Oyefolahan, (2008) and Yi, Wu, & Tung, (2005).

Malaysia is looking to become a knowledge society and make access and content available everywhere and affordable to all as well as establish a safe, strong and secure networking environment. Moreover, the interests of Malaysian citizens are being formulated and the prospects are good for all including women because there is a sufficient representation of all groups and IT advantages can be equitably shared by all (Alsagoff & Hamzah, 2007).

Malaysian government focuses on driving the prices down and enhancing quality as well as making services extensively accessible and available to support the efforts of the government. In addition it aims to generate an information rich society to encourage technical advancements and innovations in its services and enhance the international competitiveness of users and IT/multimedia application (Alsagoff & Hamzah, 2006). It shows that the development of new technologies in this country is vast and fast enough and the foundation of expanding is supported by the government.

Malaysia's long term objectives to move into the information age are indicated by various development plans, which reflect the country's policies toward Vision 2020 through the performance and implementation of the 9th Malaysian Plan, the National Information Agenda, National Telecommunications Policy and the Multimedia Super Corridor, as the part projected new image-building of the Vision 2020 aim. The government feels that it is vital to have clear-cut policies for this rapidly changing sector which will influence the way of life, economy, culture, education and entertainment. A long term strategy to achieve those policies and it is clear that the government is severe about transforming the economy into the information age by laying a number of relevant national and industry development plans (Alsagoff & Hamzah, 2006).

It is clear that the gates are open to all types of new technologies in Malaysia. Forth generation of mobile phones (4G) is considered as one of the new mobile services in recent years. So when the government intends to welcome to latest technologies, the spread of the modern devices is necessary as well to fulfill the demands. The main users of the mobile phone were those ranging in age from 20 to 49 years. While pre-teens and students below 19 years old make up 20.9% and the elderly consists of 12.3% (MCMC, 2008). Thus, it seems that young adults are significant mobile phone users in Malaysia and the preference is with youth those who are more engaged with new facilities and subscribe to 4G mobile phones.

Based on the study by Zulkefly and Baharudin (2009), younger students in Malaysia were found to be more disposed to use the extra features of the mobile phone such as, Multimedia Messaging Service (MMS) and General Packet Radio Service (GPRS), while older users preferred to use the conventional voice calls. Females used more of the SMS feature while boys were more interested with other technological features of the mobile. These findings are consistent with previous study reported by Ling (2001) in which males and younger mobile users were more fascinated by new technology.

Zulkefly and Baharudin (2009) found that mobile phone use has been hugely accepted by Malaysian especially amongst students. They mentioned the mobile phone is viewed as an important communication tool and has become an integral part of the Malaysian society. Malaysians are increasingly using the mobile phone rather than the fixed line telephone as a way to keep in touch with their family, friends, colleagues and business associates.

### **Conclusion**

The permeation of new and modern technologies and especially mobile phones is increasing everyday and Malaysia is not exception as well. Mobile phone developers find themselves in a competition and they try to come up with new inventions day to day. Based on the above studies the usage and acceptance of new generation of cell phones are high enough among Malaysian users and youth people are considered as the heavy users in this country with high interest.

Many factors made Malaysian people to be fan of mobile convergence devices. It seems the most important factor to developing of cell phones is the government which provides and facilitates the emergence and usage of modern technologies purposely. It means the Malaysian government gives this permission to mobility facilities to enter this country. As Malaysia is seeking to its aim to be a developed country in near future, so easy accessibility to information and communication technologies are considered as an important criterion for a developed country. In fact the government paves the way not just for the Malaysians but also for tourists to utilize and be engaged with modern facilities such as mobile phones.

In other words, people have access to mobile facilities with high speed internet, reasonable prices and with no limitation anywhere and anytime. According to many studies which have been done by many scholars in Malaysia, mobile users in this country are considered mobile phones not as a simple instrument for vocal communication; it is beyond an ordinary device for call and basic communication. As mentioned before Malaysian users are interested to access to email, wireless gaming, downloading music, information services, directory services, banking or investment related activities, location based services, video-conferencing and streaming video through their convergence mobile phones.

Based on different studies, it is concluded that the development of convergence mobile devices are accepted by Malaysian users and the increasing in the number of mobile users and 3G subscribers with high penetration rate show the positive position of modern facilities and new technologies in this country. As around one third of Malaysian is 3G subscribers by 2010 and youth people are among the heavy users.

Many studies have been conducted to find out about the permeation of mobile phones in Malaysia, but it is recommended that future researchers look more at negative impacts of easy accessibility of modern mobile devices among youth. In fact the speed of technology spreading is high in this country but the negative impacts such as data security need to be considered as well. Such information is particularly important for urban planners and policy makers in their efforts to create a conducive and user-friendly environment for daily mobile phone communications.

All studies indicated that Malaysian can do many things with less; it means they have access to several facilities through their mobile phones and acceptance of convergence mobile devices is increasing among Malaysian users. In other words mobile devices can provide many options for their owners to enjoy and this usefulness bring satisfaction along as well.



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