

**“OH! MY BATTERY WAS DRAINED BECAUSE I FORGOT TO PRESS THE END CALL BUTTON”:**

*A small-scale study on Malaysian senior citizen's perception towards mobile phone and its services*

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**Abstract.** The growing global ageing phenomena have promised untapped market segmentation for mobile operators and content creators to look into the 'silver industry'. However, there are limited research studies on the perception and usage of mobile phones and their services for elderly in a developing nation like Malaysia. We conducted a small study with in-depth interviews with local senior citizens to investigate their general perception of mobile phones and services. This paper reports the findings of the desirable mobile requirements for local senior citizens in relation to health, safety and communication purposes.

## **1. Introduction**

As Malaysians move into the 21st century, a large shift is appearing in social values and daily lifestyles. Malaysians are exposed to more multimedia technologies and ubiquitous wireless technologies. Having a Personal Computer (PC) at home and electronic gadgets, such as mobile phones and Personal Digital Assistants (PDA) have become indispensable tools in our daily lives. This is especially so for the urban population. However, the rural areas are slowly being introduced to new technologies as well. In the recent 9th Malaysian Plan, the government started a commitment to bridge the digital divide by implementing a plan to provide the necessary infrastructure for universal access to the Internet by implementing the National Strategic Framework for Bridging the Digital Divide (BDD).

Malaysian Communications and Multimedia Commission (MCMC) and the local government have put more emphasis in utilizing the rich, local resources and in promoting creative content with the aid of ICT technologies

and multimedia services. To achieve the mission of promoting Malaysia towards a developed nation by 2020, tremendous efforts and billions of Ringgit have been allocated in the national budget to ensure economic sustainability and to enhance human capital resources in order to benefit all citizens regardless of age, race, and belief. The developed nations have shown that for Malaysia's vision to come to fruition there must be a greater move towards achieving a Digital Inclusive Society.

## **2. Research Rationale and Literature Review**

According to Meyer (2001), over 82 million people who constituted the 'baby boom' population (born 1946-1964) will join the older adult population during the next 15 years. Declining mortality rates at younger ages, improvements in medical facilities, and better health care have resulted in longer life expectancy in both the developing and developed world. The United Nations World Assembly on Ageing held in Vienna (1982) identified "60 years old and above" as the cut-off point for elderly or senior citizens. It was a clear indicator that a large proportion of the population remains economically active beyond the age of 60.

By year 2020, it has been estimated that one in four Europeans will be over 60 years old (Mikkonen et. al., 2002). In Japan, there are 24.8 million people age 65 and older, accounting for 19.5% of the entire population in 2004 (Irie, 2005). In Malaysia, we have not even reached a rapid ageing society like Japan, the number of senior citizens in the country almost doubled over the twenty years. In 2000, the Malaysian Department of Statistics revealed the elderly population at 1.4 million, which constitutes 6.3% of a total of 23 million population. The census also projects that, by year 2020, the percentage of elderly will increase to 9.9% of the total population, which will be equivalent to 3.43 million elderly; and by year 2030, the percentage is projected to increase to 12%, which is around 5 million (Rabieyah and Hajar, 2003). Globally, the population of ageing is expected to exceed one billion by 2020.

Basically, senior citizens are categorized into 2 groups, young-old adults (age 55 to 74) and old-old (age 75 and above). In general, senior citizens are naturally experiencing a decline of their physical, motor, cognitive and memory abilities. The official retirement age for Malaysian civil servants is 55. This group of elderly, aged between 55 to 65, fall under the young-old adult group, and still remain active and productive in many aspects. A majority of them, especially those who are still able, are equipped with invaluable experiences, knowledge, and practical hands-on skills compared to the younger generation in their respective field.

At present, youngsters and young adults aged between 18 to 30s make up the largest share of mobile subscribers which promises the largest revenue stream for mobile operators from this market segmentation. However, with the advent of mobile technologies permeating the daily lives of everyone, we should not underestimate the capability of the so-called ‘*silver surfer*’ group to stay connected and for these technologies to be a communication aid for mobility. The local market of mobile phones and their services for senior citizens remains widely unexplored and potentially lucrative. Therefore, we cannot underestimate the market share of this growing elderly population in using and purchasing mobile telecommunication and IT services in their daily lives.

To achieve the mission of bridging the digital divide, we should not marginalize these elderly users in taking up mobile communication in assisting their daily mobility and improving the quality of lives. Although considerable research had been done in the advanced countries to study the perception of mobile phone usage (Kurniawan, Kahmud and Nugroho, 2006; Abascal and Civit, 2001), there is scarce information and limited studies done on the perception and usage of mobile phones and services among the senior citizens in a developing nation such as Malaysia. Hence, this paper aims to report a small-scaled study with in-depth interviews to investigate the user perceptions for mobile phones usage and its services among the local senior citizens in the local context. Ultimately, this study constitutes to the findings of a larger project with the aim of promoting a Digital Inclusive Society to bridge the knowledge gap of elderly users in their daily lives.

### **3. Methods**

We conducted an exploratory study with in-depth interviews, coupled with observations in order to study the general perception of mobile phone usage and mobile services among the senior citizens in Malaysia. There were 18 senior citizens (age range from 55 to 82) of which 11 were females and 7 were males.

Due to the historical context of Malaysia, senior citizens who were born in 1953 and earlier generally receive less formal education. The findings from the 2000 Population Census showed that 51% of the local senior citizens received no schooling (Rabieyah and Hajar, 2003). For those who fall under young-old adults (aged 55 to 74), they are either semi-literate or received less formal education in the primary school. On the other hand, the old-old adult group (aged 75 and above) generally received no formal education. However, there is a small number of elderly population who received formal schooling up to secondary or university level compared to their peers. We consider this

group as the *senior intellect* group who possess the ability of speaking, reading and writing in at least one to two languages.

Malaysia is a multi-racial country with a diverse cultural society that consists of different ethnic groups such as Malay, Chinese, Indian and other minorities. Due to the diverse culture and ethnic values, Malaysians generally possess different language abilities in terms of writing, reading, and speaking skills. The official language is *Bahasa Malaysia* (the national language of Malaysia) while English, Mandarin and Tamil are widely used in official documents and public domains. Having said this, the mother tongue for Malaysians is generally quite diverse as reflected by the different ethnic groups. This scenario is more obvious for the older generation whose mother tongues are in different dialects e.g. *Cantonese, Hokkien, Hainanese, Teochew* (for Chinese community), *Tamil* and *Hindi* (for Indian community) and other local *Malay* dialects. In order for us to build the rapport with the local elderly, we conducted the interviews in different languages to ensure the interviewees were comfortable communicating with their first language. Thus, the findings below were translated from the original language to accommodate this report.

Generally, we adopted an open-question approach during the interview sessions by asking and probing the local senior citizens about their views and experience of using their mobile phones and its related services. The sample group are mobile phone users with at least 6 months experience. We had several questions in mind as a guide during the interviews. Examples of questions are as follows: “*do you use a mobile phone?*”, “*how do you own this mobile phone?*”, “*why do you use the mobile phone?*”, “*which model are you currently using?*”, “*is this the first mobile phone you own? If not, how many mobile phones have you used before?*”, “*which particular features do you usually use?*”, “*What do you usually use the mobile phones for?*” and so forth. We also approached the users by using a walk-through approach to demonstrate how they used their mobile phones in their daily life.

#### 4. Findings

The study revealed interesting input and feedback data from the respondents, in particular how they perceive the mobile phone usage and its services in their daily lives. There are also 4 recurring themes emerging from the in-depth interviews. They are; *mobile as a social device*, *mobile as an emotional tool*, *mobile as a reminder aid* and *mobile as a navigational aid*.

#### 4.1. MOBILE AS A SOCIAL DEVICE

In general, most respondents perceived the mobile phone as being important for communication purposes. At first instance, it seems that the local elderly adopting a mobile phone has changed from resistance to acceptance. This is especially so for the likes of keeping in touch with their peer groups. One female respondent aged 60 stated:

“I can’t be bothered having a mobile phone. I hate having one because I think my children want to check my whereabouts. They bought me one mobile phone as my birthday’s gift two years ago, but I refused to use it until my friend started to ask me for my phone number. Then, I started receiving calls from my friend, and then more friends. Now, I can even spend half an hour chatting with my friend over the mobile phone. I love chatting...”

When asked about the frequency and satisfaction of using the mobile phone, the feedback was in relation to the interface issues of the mobile phone. For instance, one female respondent, 60, reiterated,

“I am using this as my third phone since the past 3 and half years. I like the first one, there...[try to recall] the Nokia model [3310], I can feel the buttons, and [the menu is] very straight-forward. I don’t need to put on my glasses you know... I know how to make calls, then the battery didn’t work anymore. Not like this one so difficult. Aiya...I don’t feel like using this one. My friend gave me another one from Korea, like no brand like this...but, I hate this mobile phone, the battery didn’t last that long like the Nokia. Only one day [usage], then it is K.O. liao...[battery ran out]. I have to recharge it everyday....I can’t hear it ringing when I put it inside my bag....”

#### 4.2. MOBILE AS AN EMOTIONAL TOOL

Apart from perceiving the mobile as a communication tool, the female elderly consider them as “emotional engagement” devices and to be able to foster a closer relationship with her family members. A female respondent, a housewife 72 years of age, considered photo-taking with her mobile to be exciting and being able to share the joy and emotions with her grand daughter.

“I never bought a mobile phone. It was my daughter who wanted to contact me, and they afraid I lost my way when I go to the market. But, they never taught me how to use it. Instead my granddaughter, Cheryl, is the one who teach me how to use the camera feature. She showed me how to take the picture. So, u can see the picture of me and Cheryl on the mobile phone [wallpaper]. Cheryl helped me to put the pic on the front [of the mobile]. Whenever I open the mobile phone, I like to see this pic. You know...I see Cheryl growing from a baby to become a teenaged girl now. I miss her so

much when she is not beside me these days. When she is not with me, I can see her smiling from my mobile.... see how close we are on the phone.”

It is also interesting to learn that the human relationship factor and its emotional aspect are crucial to encourage the elderly to learn and further explore additional features of mobile phones.

“She will call me and report to me what she learns and experiences at school almost everyday. She sometimes will send me some pic, and I also don’t know how to see them. Then, when Cheryl is here, she will show me how to read the pic [open the message].... Now, I am eager to learn how to use it, and communicate with Cheryl...but, I am too old, and feel stupid don’t know how to use my mobile....”

#### 4.3. MOBILE AS A REMINDER AID

As age increases, it is common for the elderly to experience health deterioration in various aspects of physical strength, cognition and memory. From the interviews conducted, we found out the elderly may perceive mobile phones to be able to monitor their health condition. This somewhat obscure relationship is providing some local elderly groups the encouragement to adopt a mobile device. For instance, a 56 year old male respondent commented,

“You know I am so forgetful nowadays, why not my mobile also let me to set the time and remind me, ‘hey, it is time to take your pills.’ The best is to hear someone’s voice to remind me taking my pills from the phone. I can also set it with different ring tones like beep beep reminding for taking my pills....when it is time for my medical check-up, it can tell me ‘it is time to see my personal doctor’...”

The idea of perceiving mobile phones as a reminder tool recurred several times from the interviews. In addition, the elderly describes a mobile as not only for health monitoring, but also being useful for reminding them of their daily routines.

“You know what...nowadays I use my hand phone as my alarm clock. Every time when it beeps, it tells me, ‘hey it is time to wake up.’... I don’t need to write notes everywhere and simply place the paper to remind me what I need to do everyday. When the time comes, I am automatically reminded to do a task I suppose to do....”

It is also interesting to learn that the local elderly desire to have an indicator, reminder and a locator feature when the phone is misplaced or taken away from them. They blame themselves for misplacing the mobile phone due to their absent-mindedness. A 61 year old male respondent reveals that,

“I always forget where I place my mobile [phone]. Like that day Rami called me, and I brought the phone to the bathroom, and after talking, I went out.

The time I wanted to find my mobile phone, I couldn't recall where I placed it. So I had to use the house phone to call, and see whether I can find it. But, ... there was one time, I left my mobile phone at the restaurant, paid the bill, and left...and totally forgot about it. Luckily the waiter came after me and gave me back the phone. What happened if I forgot to locate my mobile... I wish my phone could give me a ring-ring tone when it is away from me within 5 meters.”

We also discovered through the interviews that there is a dichotomy of mobile interfaces and the user's mental model of the mobile phones as compared to the fixed-line phone. As suggested by Norman (1986) in the concept of *gulf of execution* and *gulf of evaluation*, apparently there is a gap between the mismatch of action and user expectation, especially from the old-old adults. For instance, a 74 year old, an illiterate female respondent complained about her mobile not functioning like the fixed-line phone at home. She expects that by putting down her mobile phone, the action will end her calls (without pressing the end call button on her mobile phone).

“I hate my mobile [phone] because it can't be the same like the house phone. I just do like the house phone, put down my mobile [phone] after finish talking. I don't understand why my phone no more battery so quickly. Every time, I just shout loudly to the phone, 'hello...' and no answers... Then, my grand daughter told me the phone credit was finished. I also don't know when it was finished so fast....”

#### 4.4. MOBILE AS A NAVIGATIONAL AID

When prompted further about the experience of using the mobile phone while the elderly are out from home, it was found that the elderly required some sort of a navigational aid, e.g. visual map or GPS system, built into the mobile phone.

“... I usually go to the market, and do my shopping. There are more and more shops around these days. I am not good at map... I sometimes feel lost and forget where the exact shop I went. Then, I wanted to call my son, but they are working, and not good for me to disturb them....”

This was reiterated by a 64 year old male respondent:

“....that day I was at the shopping mall. It was so huge at the Mega Mall, and I nearly got lost in the maze. Ask people where I can get out from the mall, but I was walking round and round until so tired...I was panic that I afraid I couldn't get out from the place. I tried to call for help, but my phone didn't tell me where I am in the mall.”

## 5. Conclusion

In summary, the perception and attitude towards mobile phones and its services among the local senior citizens are generally quite encouraging. This promises a bright prospect for local mobile operators in exploring an untapped, lucrative market. However, we also found several issues relating to the interface, level of interactivity and language criteria that somewhat discouraged the local senior citizens in taking up and exploring further the mobile phone's features. Somehow, we classify the senior citizens as *novice*, *regular* and *explorer*. Although there are exceptional cases, mainly derived from individual interests and educational background, the senior citizens generally are regarded as late-comers when it comes to adopting new technology as compared to the younger generation. Further studies will be conducted to strengthen the information gathered from the small population sample obtained in this study. However, these initial findings provide important feedback and will help us formulate the groundwork for a larger scale study in the near future.

## References

- Abascal, J. and Civit A.: 2001, Universal Access to Mobile Telephony as a Way to Enhance the Autonomy of Elderly People, in *Proceeding of the 2001 EC.NSF Workshop on Universal Accessibility of Ubiquitous Computin.*, 22-25 May, 2001, Alcãcer do Sal, Portugal.
- Irie, T., Matsunaga, K. and Nagano, Y.: 2005, Universal design activities for mobile phone: Raku Raku PHONE, *Fujitsu Science Technology Journal*, **41** (1), 78-85.
- Kurniawan, S., Mahmud, M. and Nugroho, Y.: 2006, A study of the use of mobile phons by older persons, in *Proceeding of Computer Human Interaction 2006*, Montreal, Canada.
- Meyer, J.: 2001, *Age: 2000. Census 2000 Brief*. C2KBR/01-12, US Census Bureau, USA.
- Mikkonen, M., Vayrynen, S., Ikonen, V. and Hdikkila, M. O.: 2002, User and concept studies as tools in developing mobile communication services for the elderly, *Personal and Ubiquitous Computing*, **6** (113), 113-124.
- Norman, D.: 1986, Cognitive Engineering, in Norman, D. and Draper, S.W. (eds), *User Centered System Design*, LEA, Hillsdale, NJ., pp. 31-62.
- Rabieyah, M. and Hajar, M. T.: 2003, Socio-Economic Characteristics of The Elderly in Malaysia, in Raines, M. D. (ed.), *21st Population Census Conference*, 19 – 21 November 2003, Kyoto, Japan.