Prevalence of Mobile Usage among University Students: A Case Study of International Islamic University Malaysia

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Abstract- Mobile usage among university students is an essential part of a student's life nowadays. Students accomplish various tasks on a daily basis using mobile devices. Contacting classmates, professors and friends is done regularly via mobile devices. However the way these tasks are accomplished has changed dramatically in the past five or six years. New mobile technologies such as high speed mobile internet (3G, 4G LTE), the introduction of smartphones backed by hundreds of thousands of mobile applications, have launched a new dimension to how students now use mobile technology. This survey will investigate the current trends of students' mobile usage at the International Islamic University Malaysia. The survey will also compare these current trends with the past trends of university students' mobile usage and discuss how these trends have changed. Finally, this survey will try to predict the future trends of mobile usage among university students at IIUM. A total of 40 questionnaires were distributed among students from various faculties. The questionnaire consisted of 18 questions split into two parts. Part 1 asked a couple of demographic questions. Part 2 measured the prevalence of mobile usage among the students. The results were analyzed and some conclusions were drawn. Some predictions were made about the future of mobile usage among university students.

Index Terms- Mobile, Smartphone, Student, University, Usage.

I. INTRODUCTION

The explosion of smartphone technology along with the introduction of high speed mobile internet services had led to an exponential increase in the use of mobile technology. Nearly two-thirds of Americans now own a smartphone [1]. Malaysia has also shown a huge growth in mobile usage. According to [2], the mobile penetration in Malaysia exceeded 100% in 2012. Thirty five percent of the mobile users in Malaysia were smartphone users. This figure is expected to rise to sixty percent by 2015 [3]. Thus it is quite clear that the use of mobile technologies, specifically smartphones and high speed mobile internet has now become the norm for people. This can be attributed to the fact that these technologies are simply more convenient to use. Users can move around freely without having to carry bulky laptops to access internet services. Also users don't get tied down to a small service radius such as in the case of Wi-Fi technology. Mobile technology provides users with an almost limitless service coverage area. More and more exciting new mobile devices and gadgets are constantly entering the market, supported by the wireless technology which provides data access almost anywhere and anytime [6]. This fact combined with the ease of making calls, sending text messages, and accessing high speed internet on the go from virtually anywhere on a easily portable mobile device makes it an obvious choice. Students form a major chunk of mobile technology users. A research conducted by [5] revealed that university students in Malaysia utilize smartphones for sharing notes, sharing exam results on Facebook, recording lectures and more. A study conducted by [7] revealed that a high number of medical students owned and used smartphones. [4] Reviewed various reports on use of smartphones among university students around the globe. The review concluded that nearly every student at the college/university level owns a smartphone Thus, it is evident that mobile usage has now become commonplace among university students as well. But this extensive use of mobile technology especially mobile internet was not so prevalent about a decade ago. 2G and GPRS technologies were more prevalent at that time and offered much lower internet access speeds than what we have today. People thus preferred using a home broadband connection supplied by the local telephone company. Also smartphones were just emerging at that time.

This paper presents a study that was conducted to measure the prevalence of mobile usage among students at the International Islamic University Malaysia (IIUM). The study focused on smartphone usage and mobile internet usage. The study also focused on comparing the change in trends in mobile usage before the advent of high speed mobile internet and smartphone technology (Henceforth referred to as the "Nokia Era") and the current trends in mobile technology usage. The study finally concluded with some predictions about the future trends of mobile usage among university students.

II. METHODOLOGY

The study implemented a quantitative approach. Using a quantitative approach allowed us to quantify the prevalence of mobile usage among students at IIUM.

The study involved 40 participants representing five major faculties (also known as Kulliyyahs in Arabic) of the university. These included the Kulliyyah of Information and Communication Technology (KICT), Kulliyyah of Engineering (KENG), Kulliyyah of Economics and Management Sciences (KEMS), Kulliyyah of Islamic Revealed Knowledge (KIRK) and the Kulliyyah of Human Sciences (KHS). The participants were equally divided on the basis of their current level of study, i.e.

undergraduates (UG) and postgraduates (PG). Eight participants were chosen randomly from each of the five Kulliyyahs. Four from the undergraduate department and another four from the postgraduate department of each Kulliyyah. An equal number of participants was chosen from all five Kulliyyahs to get an accurate and balanced result on the prevalence of mobile usage among students at IIUM.

The participants were given a questionnaire consisting of 18 questions. Part 1 of the questionnaire asked two questions. First, about their level of study, i.e. undergraduate or postgraduate and second about which Kulliyyah or faculty they belonged to. Part 2 of the questionnaire asked whether they owned a smartphone, used a mobile internet service, the service provider they used and the reason for choosing their particular service provider. In order to be able to measure the shift in trends in mobile usage among university students, we asked the participants about whether they used mobile technology before the introduction of smartphones and high speed mobile internet. And if they did, how did they use the technology back then; in terms of contacting their classmates and lecturers, mobile internet and general overall use. The participants were further asked if they could rely on older mobile internet technologies like 2G and GPRS in case the university's Wi-Fi network was down. The participants were then asked whether they could rely on today's 3G and 4G/LTE technologies if the university's Wi-Fi network was down. This was again done to identify trends resulting from the evolution of mobile internet technologies. Finally the participants were asked about the trends they had observed since the introduction of smartphones and high speed mobile internet connections and what they thought about the future of mobile use among university students.

The data collected from the 40 participants was compiled for a critical analysis. The following section describes the analysis of the data that was collected and presents the results of that analysis.

III.   ANALYSIS AND RESULT

Forty participants equally divided into five groups of eight students each participated in the survey. Each group represented one of the Kulliyyahs mentioned in the previous section. Out of the eight students in each group, four were undergraduates and the other four were postgraduates. The following table summarizes the demographic distribution of the survey.

Table 1.1: Summary of demographic distribution

Kulliyyah (Faculty)	Total Number of Participants	UG	PG
KICT	8	4	4
KENG	8	4	4
KEMS	8	4	4
KIRK	8	4	4
KHS	8	4	4
Total	40		

A. Relationship between smartphone ownership and mobile internet usage

The respondents were asked whether they owned and used a smartphone or not. Out of the 40 respondents 36 (90%) said that they owned and used a smartphone whereas 4 (10%) of them said that they didn't own a smartphone. This finding is in line with the findings of similar research conducted by the various researchers discussed in the introduction of this paper where university students showed a high level of smartphone use and ownership. The respondents were asked whether they used a mobile internet service such as 3G or 4G/LTE from their cellular service provider. 87% of the respondents replied yes whereas 13% said no. We can here see a relationship between smartphone ownership and the use of a mobile internet connection. This relationship is proven by the fact that when the respondents were asked why they chose a particular cellular provider over the other (Figure 1).
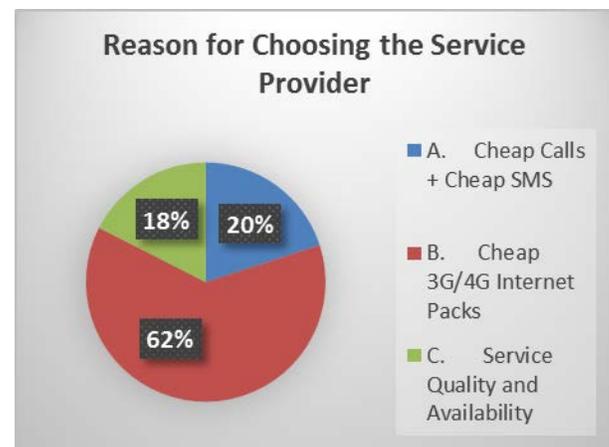

Figure 1: Reason for choosing a cellular service provider

B. Shift of trends in usage of standard mobile services

In order to gauge the shift in trends from the time of earlier technologies that included featured phone and slow 2G/GPRS mobile internet connections (The Nokia Era), we asked the respondents about their preferred method of communication with classmates during the so called Nokia era (Figure 2).
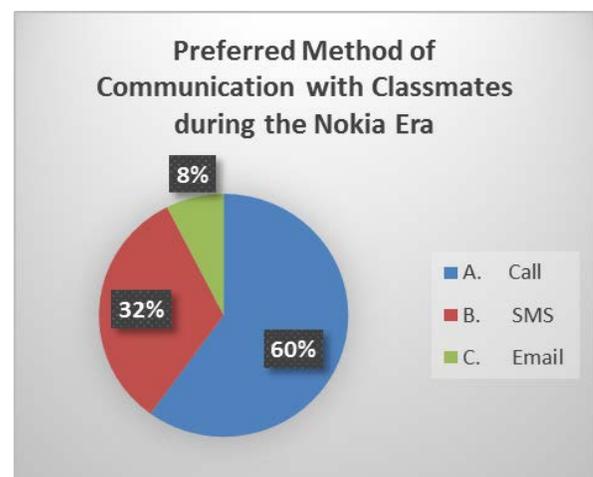

Figure 2: Preferred method of communication with classmates during the 'Nokia Era'

60% of the respondents said that they would make a normal call using their mobile phone whereas 32% said that they would send a SMS. Only 8% said that they would send an email and that too using a PC or a laptop. The same question was asked regarding their preferred method to contact their teacher or lecturers. 32% said they would make a call, 32% said they would send a SMS, 33% said they would send an email and 3% said they would meet the teacher or lecturer in person. We can identify a trend here that during the 2G/GPRS and the featured phone (mostly Nokia phone) era, students mainly utilized the normal call service from their cellular service provider followed by using the regular SMS service to contact classmates and friends. In order to contact their teachers or lecturers, they depended equally on the regular call and SMS service on their mobile phones. However the mainly utilized service to contact them was email using a PC or laptop. To compare this trend with the current trends of mobile usage among university students we asked them the same two questions as above, i.e. what is their preferred method of communication with classmates (Figure 3) and lecturers now that smartphones and high speed mobile internet connections are available.

Figure 3: Current preferred method of communication with friends

Now the preferred method of communication with friends and classmates for the university students is Watsapp (87%), followed by normal call (7%), Facebook Messenger (3%) and Telegram (3%). Also, now the preferred method of communication with lecturers is Watsapp (60%), normal call (22%), normal SMS (13%) and email (5%). We can clearly see that the trend has shifted from the use of normal calls and SMS to free messaging and calling applications like Watsapp and telegram that utilize an internet connection. This speaks directly to the finding that the majority of the students that own a smartphone are also subscribed to a mobile internet pack. This trend has thus led to service providers offering cheap mobile internet packs in order to remain in competition with the other service providers.

C. Shift of trends in frequency of mobile internet usage

The correlation between the ownership and use of a smartphone and being subscribed to a high speed mobile internet plan is further confirmed by the frequency of use of internet via

smartphones by IIUM students. When asked how often they accessed the internet using 3G/4G services on their smartphones, 85% of the respondents answered "every day", 7% answered "2-3 times a week", 3% answered once a week and 5% answered "never" (Figure 4).
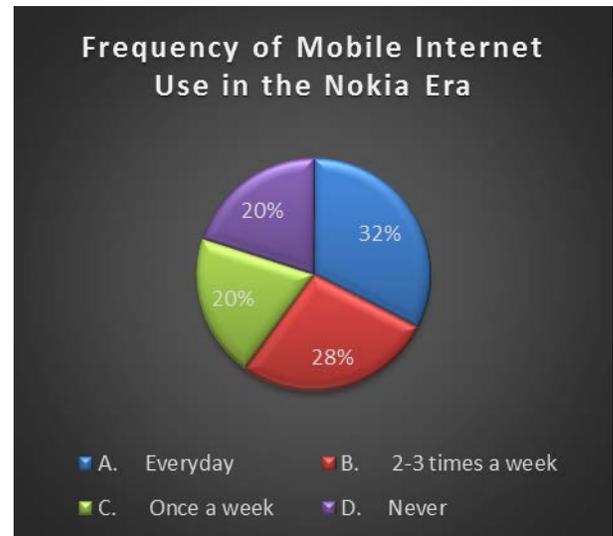

Figure 4: Frequency of mobile internet use in the Nokia era

This is in drastic contrast to their use of mobile internet during the 2G/GPRS plus the featured phone era (The Nokia era). During that era only 32% of the respondents said they used mobile internet on their mobile phones every day, 28% used it 2 to 3 times a week, 20% used mobile internet once a week and another 20% never used mobile internet on their mobile phones.

D. Shift of trends in general use of mobile devices

Another important change in mobile usage trends that we discovered is how students spent most of their time with their mobile devices in the Nokia era compared to now. In the Nokia era, 45% of the respondents spent most of their time with their mobile phones on calls, 40% spent most of their time with SMS, 7% spent most of their time surfing the internet, 5% spent most of their time playing games and 3% of the respondents didn't use a mobile phone back then. When asked how they spend most of their time now with their smartphones, 78% said on social media, 12% said on regular SMS and 7% said mostly on calls (Figure 5).
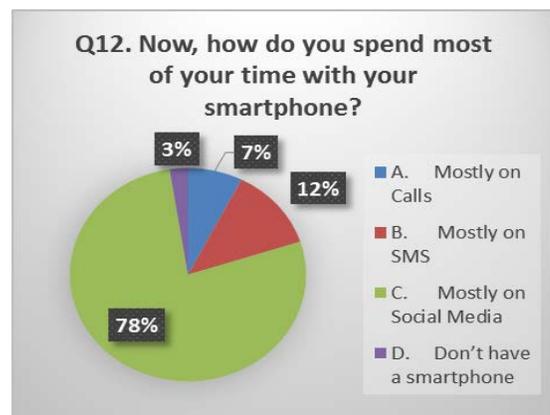

Figure 5: Current trend on smartphone usage

The change in the trend of how students are using their mobile phones now compared to the Nokia era is quite evident. The trend has shifted from spending most of the time making and receiving calls and sending and receiving SMS messages to spending most of the time on social media. The underlying purpose remains the same, i.e. communicating with friends, family and colleagues but the medium/platform has shifted from voice and messaging services to mobile data services.

E. Shift of trends in reliability of mobile internet services and future of mobile usage

The significant improvement in cellular services, specifically mobile internet services over the past decade or so has greatly enhanced the reliability of such services. Mobile internet services can now easily be used as an alternative to the common Wi-Fi and broadband services. This claim is based on the response of the majority of the respondents (87%), who said that they could rely on the 3G/4G services provided by their respective cellular service providers in case the university's Wi-Fi network was down (Figure 6). When asked if they could have relied on the older 2G/GPRS services as an alternative to the university's Wi-Fi network, 62% said yes. Thus we can clearly see that the current 3G/4G services available to the university's students are regarded to be more reliable than the older 2G/GPRS services.
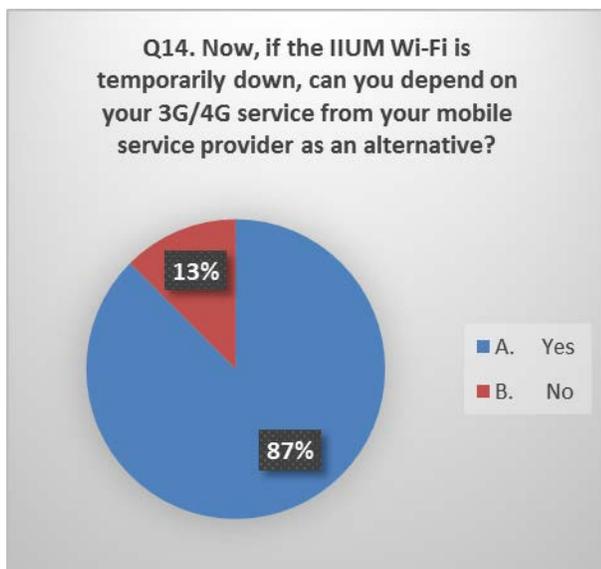

Figure 1.6: 3G/4G LTE Service Reliability

The questionnaire distributed to the respondents concluded with two questions that asked the respondents about their thoughts on the trends in mobile usage among university students that have emerged since the advent of smartphones and high speed mobile internet. A whopping 97% of the respondents said that they believed that mobile usage among university had increased since the introduction of smartphones and high speed mobile internet. Only 3% said that the mobile usage had remained the same among university students. None of the respondents thought that there had been a decrease in mobile usage among university students. Furthermore, when asked about their thoughts on the future of mobile usage at IIUM and among university students in general, 95% of the respondents said that they believed that

mobile usage among university students will increase in the future whereas on 5% thought that it would remain the same. None of the respondents believed that mobile usage among university students would decrease.

IV. CONCLUSION

This paper presented a quantitative study conducted at the International Islamic University Malaysia. The study involved 40 participants from five major faculties of the university. The study analyzed current mobile usage trends among university students and compared them with the mobile usage trends during the pre-smartphone and the pre-high speed mobile internet era. From the results of our analysis we can conclude that there has been a dramatic increase in the use of mobile devices specifically smartphones among university students and a similar increase can be seen in the use of high speed mobile internet services such as 3G/4G LTE. This dramatic increase can be attributed to the availability of cheap smartphones, loads of free messaging and calling applications and cheap high speed internet services. All of these factors have contributed to the rapid adoption of these mobile technologies by university students. Finally, based on our data analysis we can also conclude that mobile usage among university students is expected to increase further in the coming years.

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