Flexibility in Mobile Technology Usage and its' Impact on Youth: An Indian Prospective

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Abstract

There is saying that "necessity is the mother of invention", but the importance of necessity is depends on the usability and affordability of the technology. When mobile phones were introduced in Indian market, it was affordable to the upper income group. In due course of time, because of the competition in mobile handset and mobile services, it has become affordable to a lower income group too. As per the statistics of mobile service operators, around 500 million customers are using the mobile services in India. When it comes to the college going youth, it has become a necessary gadget to rope their day-to-day life. Mobile technology has completely changed the usage of wireless technology from communication oriented task to many other additional tasks. It has become a basic amenity to the college going youth.

Communication with friends, seniors, parents, professors, administrative personnel, ordering a pizza, ordering a movie ticket, paying bills, whatnot, many more things are just a click away. With the addition of many other features, mobile phones have become all in one device in today's environment. It has been used as a clock, calculator, alarm, camera, palm tap etc.

This paper attempts to study the usability of mobile phones and its' impact on college going youths' day-to-day life. The study has been conducted with the help of a research questionnaire, which administered to the students of a premier technical academic institution in south India. The results indicate that 100% of the students own a cell phone.

Keywords: Mobile Phone, Youth, students, Indian Technical Academic Institution.

Introduction

Since mobile phones have entered the Indian market, they have rapidly caught on great popularity, especially over the burgeoning youth segment of India's population. This has led to serious questions being posed over the usage of mobile phones- in college campuses and at homes, and debates over the extent young lives have been affected by the introduction of these gadgets. Has the life and lifestyle of the youth been modified by these gadgets? Has it made them closer? Who do they speak to- parents or friends within their own age group? How much of a necessity is a mobile phone- and how much of it is a status symbol? In a market that is perhaps the most fiercely fought over- with thirteen (as of 2009) of cellular operators contesting for the countries 22 telecom zones- how attracted are the youth to the latest add- on's, how often do they change operators and schemes to keep up with the latest 'bonanza offering' and discount spree.

The survey- conducted amongst 217 students at the National Institute of Technology, Tiruchirappalli (NITT) - a premier technical academic institute, also sought to find the awareness of the detrimental effects of the mobile. How many students know that mobile usage while driving can cause accidents? How often is it an aid while learning (and similarly, how often is it a distraction? Also, while buying a new mobile- surely a prized acquisition- what are the most important parameters the students look at, and how satisfied are they with the quality of these features as they are offered in the market today?

The results are encouraging, and shed an insight into the youth psyche. Many are very aware of the latest schemes, most prefer the prepaid over the post-paid. Though technologically aware, they are not gizmo freaks in the extreme sense- most change mobiles only once every two years. Parents and close friends enjoy equal importance- a deviation perhaps from the traditional Indian model of things. Also, most of the surveyed seem to be aware of the flip side of the mobile phones- they do not use the mobile while driving, and do not shout while speaking on the mobile in public places.

With India geared up to become the world's largest cellular base, the Indian youth look set to be center of every operator's dream market, and no doubt, the mobile phone is set to influence the trends and times of India's youth for a long time to come. Today, it seems that the youth are receptive, enthusiastic and aware. This is a welcome sign.

The world has become smaller in the past 5 years than ever before in history. The advent of technology has enchanted, addicted and in enormity of its embrace, it has introduced new dimensions to the way we do normal things. Mobile technology is one of these advents. And how! Mobile technology started gaining in popularity towards the turn of the millennium. In India, the mobile phone was introduced in August 1995. In the initial stages usage was 16 million, and this increased to 22 million in 2004, 32 million in 2005 and 65 million in 2006. As of January 2009, total mobile phone subscribers numbered 362 million, having added 15 million that month alone. This has led to fervent speculation that if growth takes place at the same rate, India will be having the largest number of mobile users in the world by 2012. (http://trendsniff.com/2009/02/22/mobile-subscribers-china-india-2009/)

Various paraphernalia and attractive features helped make the cell an all- in- one box- for the features include camera, video facility, radio, internet connectivity, GPRS, music players, blue tooth, games, clocks, calendars and even memos. The short messaging service (SMS) form of sending short notes and 'messages' when calls were too long, costly or simply unnecessary also caught the popular imagination, especially amongst the youth. Today even a feature like the flip phone (an extra cover that holds the screen which needs to be 'flipped' upwards for the cell phone to operate)- which has no practical useage except an attractive look and feel, has become in demand.

The youth in India- a fast growing, developing nation- have always been regarded as her strength. There were 2,297 engineering colleges with a total student intake capacity of 8.19 lakh students and close to 1,500 management institutes with an annual intake of 1.5 lakh students (2008-09). With such a huge talent pool- of technology friendly, gadgets hungry group, and a booming economy that provides the economic incentive to indulge, cell phones have become a bare necessity.

The mobile has thus become an easy way to communicate- whether it is daily forwards of jokes, quotable quotes, religious stanzas or the daily class time table delivered to you the moment you wake up- cell phone has been absorbed, like water into a sponge, to the psyche of youth. Messages are also increasingly growing in popularity- whether it is the (often proscribed, but rarely implemented) texting during class, or exchanging an open- ended, but often inconsequential, 'Wassup' during a not- so- interesting hour (and often to a friend of the other sex), cell phones are an easy way to socialise and unwind within ones immediate circle of friends and colleagues.

Thus the Indian youth have been an intensely valued and therefore heavily competitive sector in the cellular market for operators. With attractive schemes, new versions of the cell phone dropping in

almost every other day and innovative ideas that keep the messaging and calling traditions vibrant, the cell phones have had a profound impact on the Indian youth. The How and In What Way are analysed in this exhaustive survey conducted at one of India's premier educational institutions- the National Institute of Technology, Tiruchirappalli.

Literature

In the present scenario, mobile phone has become a compulsory device for youth, research studies indicate that most of the students own a cell phone. Sixty-six percent of the students use voice calls most frequently and thirty percent use text messages most often. All of the students believe that they should be able to receive emergency information over a cell phone during class time. Seventy-six percent believe that cell phones seldom or never assist in classroom learning. However, students report that cell phone use impacts on study time outside of class (Braguglia, 2008)

Studies have been done on various dimensions of mobile technology usage. The number of internet mobile users will from 577 million in 2008 to 1700 million by 2013 in the world (Dusan, 2008). Another study reports about the number of mobile users, which says it will reach 4billion in the world by 2010 (ISuppli, 2006).

Using cell phones in public exams, regular course end exams and all kind of competitive exams in India, it is strictly not allowed during the exam time, but still the young minds are using innovative devices like Bluetooth technology (recently many found guilty in state medical exam in Andhra Pradesh, India). Many assume that the student is cheating if they have a cell phone out during a test (Walson, 2006).

In the early stages of mobile phony (mostly in late nineties and early years of this decade) the new features like vibrations, slim set (mobile shape) were the point of pride and for others its' just an another added irritation to the existing device (Simon, 2007).

The mobile connections growth in India has continued, which has topped 10 million per month in 2008, in March 2008, mobiles accounted for 86% of all telephones in India, and by October 2008 this number had increased to 90%. (Kathuria et. al., 2009)

The hand held mobile, today an essential service facilitating day-to-day life, it has been experiencing the drastic increase in penetration since the introduction of the Global System for Mobile communication (GSM) standard in the early 1990's. It has been a medium for civilizing effective practices and communication & knowledge distribution (Sheng et.al, 2005). Mobile technology is gaining magnitude and attractiveness in organizations (Gayeski, 2002; Andersen et al., 2003; Siau and Shen, 2003; Siau et al., 2004). Mobile technology is used organizations comprise mobile access to company Intranet (Nah et al., 2005), mobile brokerage services (Looney et al., 2004), mobile is used as medium for payment and banking services (Herzberg, 2003; Mallat et al., 2004). The impact of mobile usage on health is covered under WHO studies and it found that cancer may be one of the ill effects (Repacholi 2001). The instant messaging helps bonding the two roles – student and teacher – in the teaching method efficiently (Rau et.al, 2008).

Use of a mobile phone increases social inclusion and connectedness (Mathews, 2004; Wei & Lo, 2006) amongst a group in which friends and peers are highly influential (Smetana et. al, 2006). Customization and personalization of mobile phones by ring-tones and screensavers can reflect an individual's self-identity (Srivastava, 2005). Most of the young users believe that having a technologically sophisticated mobile phone improves their prominence amongst peers (Ozcan and Kocak, 2003). Young

female youth, in particular, state that having mobile phone gives them the feelings of safety and security, in particular, when they are alone at night, since they can able to immediately contact others should an urgent situation arise (Carroll et.al, 2002).

For most of the young users mobile phones endow with a sense of support. Apart in addition to benefits resulting from mobile phone use, on the other hand, awkward outcomes have been found. A high level of debt from excessive mobile phone use (Griffiths and Renwick, 2003) has prompted some youth to steal to pay their phone bill (Netsafe, 2005). Classrooms and public environments (Selwyn, 2003, ACNeilsen, 2004) are disrupted when mobile phones are used at unsuitable times and using mobile phones while driving leads to an increase in accident risk (Haigney and Westerman, 2001; McEvoy et al., 2005). Young youth using mobile phone while driving than any other age group (Glendon and Sutton, 2005). Recent research has linked problematic mobile phone use (such as when driving) with addictive behaviour (Bianchi and Phillips, 2005; James and Drennan, 2005).

Data Analysis

At the outset, let us gain a thorough insight into the campus where the study is being done and why this is a good location for such a survey. The survey was conducted in the form of a questionnaire. Data were collected from 217 under graduate (UG) students, belonging to various departments. Students are taken in from all over the country. There are also Non- resident Indians and students from SAARC countries who study in the campus.

As most of the students are hostelites, and far away from any large city, cell phone usage can be expected to be a little higher than in other areas (as then opportunities for other activities- going out, recreation outside campus, etc are more). It can also be inferred that due to the exposure to technology-both inside the classroom and outside (at internet labs, data/net cards, TV, newspapers, mobiles, etc)- students are aware of major advancements and trends in the world and are influenced by them in some fashion. Thus the community we are set to analyze here can be summed up as: relatively free-thinking, independent, technologically-savvy, incredibly diverse youth who have bright prospects of a career from then on.

Keeping this backdrop in mind, let us analyse the study findings, table by table. During the analysis, it must be noted that every survey finding has been reported as comprehensively as possible so as to warrant minimum explanations. Thus tables are followed by graphs that best illustrate the table, and some data are backed up by the SVI (mean), the SD (standard deviation) and t- values. Also, multiple analysis of data has been done in some circumstances- where graphs have been created for the number of respondents for a particular parameter, and the percentage of respondents for the same parameter to warrant multiple layer analysis.

Table 1: Number of SIM cards owned by the students

Number of SIM cards owned	One	Two	More than 2
Students	118	68	31
Percentage	54.38	31.34	14.28

SIM: Subscriber Identity Module

Table1 shows that out of the total sample size of 217 students a large number owned only one SIM. This is along expected lines as many students are from rural areas and with lesser economic means. However, more than 31% indicate the presence of more than two SIMs. This is a bit surprising but can be explained by the fact that as semester vacations take up three months in a year students, in general, have a different SIM card once they are at

home. Some students might also be reluctant to dispose of old numbers even after acquiring a new mobile and tend to keep the original number with them, just as a back up, as gaining a new number and cell takes up time, effort and money.

Table 2: Type of connection opted by the students

Type of connection	Prepaid	Postpaid	Both
Students	164	44	9
Percentage	75.58	20.28	4.14

Table2 shows an overwhelming majority of the students (a little more than three- quarter) opting for the prepaid segment. This is for two reasons: the primary being that many competitive schemes are available for people opting for the prepaid connection.

Besides, boosters and 'special talktime' and 'top up' packages are also available many of which promise heavily reduced (against the market rate) prices, if not free, on messaging, national level and local calls. The second reason is convenience. Postpaid connection would mean having to deal with bills and payment procedures.

Table 3: Frequency of changing mobile phones

How often do students change mobile phones	Students	Percentage
6 months	34	15.67
1 yr	37	17.05
2 yrs	96	44.24
3-4yrs	25	11.52
Never	13	5.99
If need arises (mobile lost/theft/broke/ not-functioning)	12	5.53

The prepaid option which involves giving cash and mobile number to a booth at the shopping center is much more simplified and hassle free. However, the only advantage the postpaid connection offers is the freedom from keeping a constant tab on the balance left as there is only a one time, overall payment necessary. This is perhaps the reason why 20% of students use this connection offer.

Table 3, seems to going along with the major trend of Table 1 and 2: that college students keep a check on their wallets when it comes to spending on mobile phones. While a majority of students had only one SIM card and preferred the cheaper and more hassle-free prepaid connection, here too, students seem to prefer changing the cell phones only once in two years.

There are a few reasons for this: Despite the glitz and glamour of the advertising campaign and the frequent media talk of a 'young India that splurges', it must be kept in mind that the surveyed are mainly college students who come from sharply different backgrounds, a large number from far flung places and many, the first undergraduates in their families. Thus such students have to maintain a constant vigilance on their spending patterns. This perhaps explains why many fight their temptations and buy a cell phone every 2 years which is the largest segment in this diverse group. Another reason maybe that some students rarely find time for stays at home (where mobile phones are usually bought) as they are away on internships and projects. However, the survey also points towards an almost equal chunk of students replacing their cell phones every 6 months (semester) and every year. This should be some respite for cell manufacturers and gizmo freaks!

Table 4, throws up an interesting finding, and perhaps the first braking of the idea of a 'student monolith'. Many experts have tended to classify students as one large chunk of uniform, homogeneous minds more so when it comes to attitudes towards cell phone and related gadget

usage. This table shows otherwise. It can be clearly seen that there exist broadly two types of the student: one who uses the cell less than 3 hours a day (50%) and the others who use it for greater periods.

Table 4: Mobile phone usage per day

Mobile phone usage per day	Students	Percentage
< 1 hr	50	23.04
1-3 hrs	62	28.57
4-6 hrs	62	28.57
7-9 hrs	19	8.76
> 10 hrs	24	11.06

General assumptions could be made that the ones who use the mobile for extended periods generally have a close friend/ soul mate who they talk to or an important work at hand that involves coordination and constant communication.

Table 5: Monthly expenses on mobile

Money spent on mobiles per month	Students	Percentage
< Rs 100	37	17.05
Rs 100-300	69	31.80
Rs 300-500	65	29.95
>Rs 500	46	21.20

Table 5, indicate that students generally spend from Rs 100 to Rs 500 per month. Table 5's results corroborates with table 4's as here to the students can be vertically split into those who spend less than Rs 300 and more than that amount.

An interesting note is that despite a number of students using the mobile for around 4 to 6 hours a day (Table 4), the mobile bills come to a maximum of Rs 500 only. This is perhaps due to the intense cost cutting measures, heavily competitive schemes followed by operators where the customer is spoilt for choice. This allows the student to keep tabs on the budget while spending adequate time on the mobile!

Table 6 is interesting! While it confirms our earlier premise that cell phones are now regarded as a bare necessity, it also shows that there is an increased awareness amongst the youth on the harmful effects of the mobile. This is a very healthy trend.

Table 6: Opinion of students

Opinion based questions	Yes	No
	Percentage	
Mobile phone a bare necessity?	89.4	10.6
Increase in accidents due to usage of mobiles?	86.6	13.4
Good to ban mobile phones in college?	19.8	80.2
Cell phone radiations harmful for health?	56.2	43.8
Do you speak loudly in public?	31.3	68.7

An overwhelming percentage (87%) believe that there is an increase in accidents due to usage of mobile phones, while a similar percentage are aware of cell phone radiations being harmful to health. However, a vast majority of the students seem opposed to a ban on cell phone in college. This is perhaps because the cell has become an inevitable part and parcel of life, and that as its uses is so varied and mutli- functional, restricting it from college simply serves no purpose, except seem draconian. Cell phone etiquette also seems to be catching on, with a majority not speaking loudly while in public spaces.

Table 7: Criteria to be considered while purchasing mobile phone

Criteria	Percentage
Features (Camera, MP3, 3G, Dual Sim, GPRS etc.)	37.26
Cost	30.58
Ease of handling	26.43
Brand and model of mobile	05.73

Clearly features and cost are the two most important factors. Interestingly, though features matter more. Also (and

quite surprisingly, brands matter very little. This is however maybe because the cell phone market seems flooded by brands- all of them equally competitive and innovative, and thus the lesser importance to brands and greater focus on features. Also, maybe because of the abundance of cell phones in college areas, students feel the only way to be different, and stick out is by opting for a mobile that has all the various features (and different versions of each). Ease of handling the mobile is the third most important parameter chosen.

Table 8: Frequency of calls to near and dear ones

Frequency	Parents(%)	Very close friends(%)
More than once per day	27.65	20.28
Once per day	48.85	31.80
Weekly once	15.67	36.87
Monthly once	07.83	11.05

Table 8 follows an expected trend: most students talk at least once a day with both, their parents and a close friend. With college being a grooming ground for cultivating close friends and relationships that endure, this is expected. Also many students (almost one- third) speak to a close friend once in a while (or week). Very few communicate with home and friends after elongated periods (a month).

Table 9: Mobile phone as an aid or distraction with classroom and studies

Frequency	Usage in class (%)	Distraction when you study (%)	As a learning aid during study (%)
Once/hr	50.7	21.2	15.7
Once/day	24.9	34.1	26.3
Once in 2 days	9.7	20.7	24.9
Once/week	14.3	21.2	32.6
Never	0.5	2.8	0.9

However most students also think that when it comes to studying, cell phones are more of a hindrance than an aid. Cell phones seem to aid academic pursuits only once a day or once in two days, while they distract relatively a little more often. However despite increased mobile usage, only 46 on 217 students or 22% seem to indicate that a mobile distracts every hour. This might be because most students are oblivious to a cell while studying or simply that they are so used to a cell that they no longer consider it a distraction.

Table 10: Score on the importance and satisfaction level of the following features of mobile phones on a 5-point scale - analysis of SVI, SD & t-value

Features	Importance			Level of Satisfaction		
	SVI	SD	t	SVI	SD	t
SMS	4.3	1.1	16.3	4.1	1.2	14.2
MMS	2.3	1.5	-1.7	3.0	1.5	0.4
Calling People	4.3	0.9	21.6	4.1	1.1	15.7
Music Player (MP3)	4.0	1.1	13.7	4.0	1.1	12.9
Blue tooth	3.9	1.1	11.8	3.9	1.1	11.8
GPRS facility	3.8	1.2	10.1	3.8	1.3	9.2
Camera	3.9	1.1	11.6	3.8	1.2	10.2
Text Editing software's	3.5	1.3	5.7	3.5	1.4	5.0
Games	3.4	1.4	4.2	3.5	1.3	5.9
FM Radio	3.4	1.4	4.5	3.5	1.3	5.5
Clock	4.1	1.0	15.6	4.1	1.2	14.8
Calendar	4.0	1.1	13.2	4.1	1.1	14.1
Headset	3.9	1.1	11.7	3.8	1.2	9.8
3G	3.4	1.4	4.1	3.5	1.4	5.2

SVI*: Scale Value Index, SD: Standard Deviation

*$\mathbf{Scale\ Value\ Index\ (SVI) = \sum L_i\ F_i\ /\ N,}$ Where, L_i is the response score on the scale, F_i is the frequency of respondents responding to L_i level and N is the total number of respondents responding to that question.

From Table 9, it is clear that except MMS, the importances of all other features are highly significant. SMS and calling people have rated as high as 4.3 on 5-point scale and followed by clock, music player and calendar. The deviation from the mean

value is not much high, it shows the consistency of the responses.

Features acquire an importance due to their high rating in Table 7- students ranked it as the deciding parameter while buying a cell. Also as the mobile rapidly becomes a more intelligent devices, and more all- in- one than ever before, the paraphernalia that accompany the gadget are sometimes more used than the gadget itself.

The talk facility for which mobiles were initially introduced (and invented) continues to remain the most important (and amongst the most satisfactory features) to the cell. Along expected lines, the SMS or the short messaging service is the second most important (and most satisfying feature) while rating a mobile phone. Mobiles that are often difficult to type messages in are often not preferred by students.

In order, the clock, music player, calendar, headset, blue tooth, camera, GPRS, text editing software, FM Radio, games, 3G facility and MMS follow. While this data will be useful for cell manufacturers, there are two unexpected trends that can be explained: the clock is the third most important feature noticed. This can be because the students being surveyed are in college where many experiments and lab procedures are done following a stop watch. Thus the stop watch becomes an academic aid. Another finding is the rather low importance given to games (only 3.39 on 5) the second lowest. This maybe because as there so many other gadgets and uses for the cell, and as PC games improve in 3D effects, LAN connectivity, etc cell phones lose their charm as an effective gaming tool.

It can also be noticed form the graph that features noted the most important are given a similar rating on the satisfaction scale, i.e., students are satisfied with the qualities of the feature. The only significant deviation in this regard is with respect to the MMS facility (0.2 points). This can be explained by the fact that as the camera quality becomes more important video quality also improves and thus students are more satisfied by the MMS service, though they might actually have little need for it.

Conclusions

This survey gives an exhaustive report on the perceptions and current trends of students living in technical institutions in India towards mobile phone usage. All students surveyed had a cell- a sign of how deep the cell phone had penetrated. In fact, an overwhelming majority (89.4%) rated cell phones as a bare necessity. Most students have one SIM card, a significant portion (45%) though have two or more SIM cards. Given the spate of offers, students are also conscious of various schemes and offers (perhaps this is enhanced by frequent calls from operators advertising rates, programs and ringtones!), and they tend to choose the ones that are least expensive. They also tend to choose the prepaid scheme over the postpaid ones- maybe because the former is hassle free and can be monitored.

The youth- or at least those still in college- seem more conservative when it comes to changing mobile phone models though. A majority (44%) change only once every two years. However a more gizmo crazy 15.67% change a handset every semester. There also seem to be convincing majorities (in excess of 60%) on issues that have generally been talked about in the mainstream media: is there an increase in accidents due to the usage of mobiles (yes seems to be the opinion), is it reasonable to ban mobiles in college (an overwhelming no), is cell phone radiation harmful to the body (yes), and do you follow simple cell phone etiquette like not speaking loudly in public places (yes). This also indicates that the youth are well aware of these pressing issues and have more or less uniform opinions on them.

The youth also seem to rank features as the most important parameter they rate a phone with. This is followed

cost and ease of handling. Amongst features, they seem to prefer the calling facility, message- ability, clock and music player! In fact going by the importance placed to add- ons, cell phone paraphernalia seem to have gained good popularity even if they come with an added cost.

Usage of mobiles in class is very high- only one student out of the 217 surveyed didn't use the mobile in class! But opinions differ starkly as to whether it is a distraction or an aid. On the whole, the survey presents a fresh perspective on the college going student and his/ her opinion on the mobile phone. The insights shed by the survey into the often unpredictable youth psyche and their opinions on raging issues of the day is a detailed here.

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