“Cell phones seem to prioritize communication with distant people over those sharing one’s space, and the ethics of these new behaviour are not universally agreed upon” – James Katz.

“It is not just about building the tool anymore. Now it is about what people use the tools to do. How will human behaviour shift when the appliances we hold in our hand, carry in our pockets, or wear in our clothing become supercomputers that talk to each other through a wireless mega Internet?” - Howard Rheingold.

Review of Literature

2.1 Cell phone and The Society:

This is the age of Personal Communication Technologies (PCT) (Campbell & Park, 2008). It is evolved out of the network society of the 1990s. The main characteristic of this PCT age is the widespread adoption and use of mobile telephony. It clearly means that personal communication technologies are distinctive from other network technologies (e.g. the computer). Personal Communication Technologies are often worn on the body, are highly individualized, and are regarded as extensions of the self. It has been said that they make us individually addressable regardless of where we are (Campbell & Park, 2008).
The mobile screen has now become the ‘third screen’ in consumer lives after the TV and PC screens. Mobile phones can become mobile companions when they are able to leverage the full power of the Internet, and not just voice. Along with the boom in mobile telephony around the world, a parallel wave of innovation in wireless corporate networking promises to usher in a new world of ‘un-tethered knowledge workers’ and ‘flexible network organizations’ (Rao & Mendonza, 2005, pp. 22 - 23).

The scene was totally different before cell phone technology was introduced and adopted in the society. Landline telephones were there for communication, but it was not the sort of frequent, easy, spontaneous, casual communication that would have characterized the small communities for which we are adapted by evolution, and in which most of us lived in pre-industrial times. Communication by landline telephone involved a certain amount of deliberate effort and planning (Fox, 2001). On the other hand mobile phone communication is exactly the opposite.

Manuel Castells in his trilogy ‘The Information Age: Economic, Society and Culture (1996, 1997, and 1998) identified it as the latest and prominent feature of social organization of the Information age. It is a synchronised and integrated network of information, production, and exchange. These networks challenge (but do not replace) the nation-state, transform (but do not replace) stand-alone firms, and transform (but do not eliminate) human experience of space and time (Donner, 2008, p. 30). Mobile communication is definitely an integral part of personal, national, and economic life, facilitating business and increasing the conveniences of daily existence (Srivastava, 2008, p. 26).
Thomée, Härenstam, & Hagberg conducted a detailed study on ten thousand men and ten thousand women, born between 1983 and 1987, were randomly selected from the general population of County of Västra Götaland, Sweden. They concluded that because of the quick development and widespread use of mobile phones, and their vast effect on communication and interactions in work and private life, the society is experiencing cultural and social changes in positive as well as negative ways. Some examples that one can quote are, increased materialism and individualism, the possibility of a decreasing stigma about mental illness, improved screening for mental illness, and increased help-seeking behaviours etc. (Thomée, Härenstam, & Hagberg, 2011). Donner (2008) also cited that Castells et al. (2007) observed the various impacts of widespread mobile use: on youth culture, on language, on politics, and on human experiences of space and time (Donner, 2008, p. 32).

Another approach, presented by Katz and Aakhus (2002) suggests an all-embracing theme of Apparatgeist – a universal spirit embodied in mobile technologies that, by reducing the cost of communication and by increasing individual control over the time, location, and content of communication, tends to encourage individualism and self-expression (Donner, 2008, p. 32).

It is interesting to know about the term ‘Apparatgeist’. It is coined by James Katz and Mark Aakhus, union of two words ‘Appratus’ (device: mechanical or social system to achieve human ends) and ‘Geist’ (mind: consciousness, spirit). This theory is designed to analyse the perception of people and how they describe their personal technology, especially the communication device. The term is used to characterize the interaction between social perceptions and folk theories, on the one hand, and social needs and their fit with technology, on the other. This theory gives both an interpretive and predictive framework to the changing social role of communication technology (Katz, 2003, p. 313).
On 7 November 2005 the Royal Society for the Encouragement of Arts, Manufactures and Commerce, London organised a conference on ‘Mobile technology and culture change: how mociology is changing the way we live.’ The word Mociology was introduced as an upcoming faculty of knowledge which focuses on ‘the study of the innovative ways people use their mobile phones or wireless systems in daily life.’ Ralph Simon described it as ‘the sociology of the mobile lifestyle’, and explained the genesis of the word is mobile + sociology, though the coinage is unprepossessing (the blending suggests that the e is pronounced as an s). He also created the term ‘mocio-economics’, which he described as “the underlying economics that drives the fast emergence of mobile entertainment revenues and economics” (Simon, 2005).

The society is experiencing ‘mobile ecosystem’ due to the technological advancement. The two most important features of this ‘mobile ecosystem’ are (i) the explosive growth of SMS based on humble 160 character strings, and (ii) near addictive behaviour in the youth user segment which is now referred to as ‘Screenagers’ or ‘Generation Ttxtor’ or ‘Generation Y-erless’ (Rao & Mendonza, 2005, p. 25).

Using a mobile music player with headphones in public creates a personal audio environment, distinctive to the individual, thus enabling one to avoid interacting with public space with the other people who are there, often referred to in the literature as ‘co-present others’. When personal entertainment technologies are used in public space, it ‘re-spatializes’ (that means rearranges or transforms the attributes related to space around) subjective experience in public. Individuals may carry their familiar, comforting sounds with them on portable personal stereos, essentially carrying part of their personal, private home, with them on any journey, enabling them to ignore any ‘strange’ or ‘anonymous’ environment through which they pass (Green & Haddon, 2009, pp. 52-53).
Cell phones have dual potential. One, this technology enables communication in places where it was not possible before, and two, the user need not be literate enough to use it for instantaneous dialogue and/or information transfer. More and more users throughout the world carry cell phones as part of an individual’s desire to preserve and maintain safety and security. Sociologists refer to this as the social image of the technology (Mechael, 2008, p. 91 & 92).

According to Castells (2000), information and communication technologies of the 1980s and 1990s nourished a shift in social organization characterized by decentralized, flexible, network nodes based on shared interests rather than shared geographic space, which he named as theory of ambition about networked flows of information; and similar to McLuhan’s characterization of the mass age, he described this pervasive shift in social order as the rise of a new network society with ‘The network is the message’ (Campbell & Park, 2008, pp. 371–387).

Today, the Mobile phone is not just a social technology, but a highly personal one as well. The close relationship between the mobile phone and the body contributes to the device’s personal and symbolic significance (Campbell S., 2008, p. 125). It made available an affordable, basic, person-to-person connectivity for many users in the developing world (Donner, 2008, p. 32). Some scholars like Obadare (2004), Perttierra et al. (2002), and Rafael (2003) look at mobile technology as a tool which can help the underprivileged people to redistribute political power giving them opportunity to talk and participate in the main stream activities of the society. Varbanov (2002) and Donner (2004) agree upon mobile phones’ significant symbolic power which represents modernity, prosperity, and individuality (Donner, 2008, p. 32).
It is a disruptive technology that changes every aspect of society. For example, meeting times and places can be fluidly negotiated, that is, time gets softened and place can be blurred. The SMS subculture – the style, content and the very act of messaging itself – provides new raw material for identity formation, social bonding, individual personality and peer-to-peer networking. (Rao & Mendonza, 2005, p. 60).

James Katz in his interaction with students and faculty members at MIT said, ‘Cell phone affects our built environment, most notably in the form of widespread advertisings, not just in industrialized cities, but in the third world. Unlike the internet, which has sparked fears of a ‘digital divide’ between the industrialized and developing worlds, cell phones have become popular all over the world. The cell phone is portrayed as glamorous, but also inexpensive. Many users decorate and personalize their phones, giving rise to folk art cottage industries. The cell phone has become a kind of art in itself, in which a user's choice of phone and decoration acts as a kind of personal statement. The ubiquity of the cell phone has caused changes in certain cultural norms, as well. Businesses, movie theatres, parks and restaurants are just some of the spaces in which the appropriateness of cell phone conversations is disputed and unclear.’ (Theater, 2005).

Robin Jeffrey in his forthcoming book titled ‘Celling India: The Mobile Phone’s Contribution to Capitalism, Democracy and Unsettling Society’ states that the mobile phone is the most disruptive individual device since shoes. Shoe as an accessory gave people who owned it ability to do things which they could not do in the past. The then civilized people associated their social and individual identity with their shoes. Taking away the shoes of common people makes them feel inferior and one can control them easily. The mass mobile phone can give poor people an autonomy their parents could never have dreamed of. People can organize, protest, document and do business in ways that were previously impossible. The mobile phone brings an immensely disruptive autonomy into people’s lives. That can do both good and bad things, but Jeffrey underlines mobile phone’s potential to equalize is huge (Ullekh, 2011).
A research paper presented at Mobile Communication and Social Change, the 2004 International Conference on Mobile Communication in Seoul, Korea, presents another dimension of mobile phone use. The mobile phone is often perceived as an emblematic technology of space-time compression, touted as a tool for anytime, anywhere connectivity. The ethnographic references like power-dynamics and regulation of different kinds of places: the private space of the home, the classroom, the public spaces of the street and public transportation, and the virtual space of peer connectivity enabled by mobile communications (Ito, 2004). It has become an indicator of class status and a site of class discourse. The primary buyer and/or user of latest model or technology of cell phone is the rich class. The poor people can afford that model/technology only when rich people stop buying and using them and they become cheap (Portus, 2008, pp. 113-114).

With the advent of PCT and its frequent use, an individual is available for communication anytime anywhere which gives rise to a new type of parlance – ‘On line existence’. At least through locutions (word or phrase, especially one used by people in a particular area or from a particular group) suggest that PCT generation is living on-screen and off-screen lives or living in plugged and unplugged worlds. All those who are using PCT are tethered to their communication devices, people and things they reach through them. Hence the concept of ‘tethered self’ is introduced (Turkle, 2008, pp. 121-122).

Some mobile phone users look at their mobile phones as extensions of their physical selves like Finns commonly refers to the mobile phone as ‘kännykkä’, which translates into English as “an extension of the hand”. Ling (1996) explained the social meaning of mobile phone is linked to the fact that the medium is almost by definition, individual and not attached to a physical location (Campbell S., 2008, p. 154).
People using phones for text messages have developed a shorthand, they have different styles of keying in their messages, some use their index fingers, some thumb, others both, others tap away with one hand without even looking at their phone (Rao & Mendonza, 2005, pp. 292 - 293). Neither standardized body postures are required with texting, one can sit or walk or drive while sending messages. Using the cell phone, one begins to incorporate its logic and techniques to the extent of becoming identified with what appears to be a novel society category: ‘Generation Txt’ (Rao & Mendonza, 2005, pp. 292 - 293).

The galloping speed of adoption and use of mobile communication technology contributes to a multitude of social consequences, including new representations of the self, new forms of social connection, and private use of public space (Campbell & Park, 2008, pp. 371 - 387).

James Katz observed that the cell phone as a cultural artefact has some unique qualities. A few that he pointed out were i) it embodies the genius and the disruptive excess of capitalism, ii) its omnipresence in most developed societies in Europe, America and Asia iii) it is a laboratory to test the limits of media technology convergence (Theater, 2005). Less a telephone today than a multi-purpose computer, cell phones are game consoles, still cameras, email systems, text messengers, carriers of entertainment and business data, nodes of commerce. Particular age cohorts and subcultures have begun to appropriate cell phones for idiosyncratic uses that help to define their niche or social identity (Theater, 2005). Thus human civilisation is experiencing a new type of culture and Katz named it as ‘Cell phone Culture’. Cell phone culture has an entirely different and new set of shared practices, norms, values and symbols and the cell phone as a technological device is already generating a decorative and aesthetic afterlife.’ (Theater, 2005).
He adds, ‘smaller industries now market mobile games and mobisodes, video content designed specifically to be viewed on cell phones other creative uses – short messages services, text messaging, and fake talking/ in which people pretend to talk on their phones to combat loneliness or fear’ (Theater, 2005).

Based on a study of 1440 Swiss teenagers in 2003, Hans Geser concluded that today, almost all closer interpersonal relationships have to be analyzed as hybrid multi-media processes that combine primary face-to-face gatherings with phone calls, text and image transmissions, instant messaging or video streaming sessions and other digitized communication (Geser, 2007).

A national survey was conducted by Institute of Commercial Management, involving interviews with a representative sample of 1000 mobile users across the United Kingdom in 2000. The analysis and interpretation of the data was done at Social Issues Research Centre, Oxford, United Kingdom. Report was prepared by Kate Fox, in which she observed, ‘in the fast-paced modern world, we had become severely restricted in both the quantity and quality of communication with our social network. Mobile gossip restores our sense of connection and community, and provides an antidote to the pressures and alienation of modern life (Fox, 2001)’. Mobile phones are very handy when people want to gossip around. It allows the users to gossip ‘anytime, anyplace and anywhere’ either by talking or texting. Mobile gossip is an effective and important new stress-buster and ‘social lifeline’ in a fragmented and isolating world (Fox, 2001). She found out that mobile phones are even used as the new garden fence. Especially women use the gadget as a ‘bodyguard’ when feeling vulnerable in public places – in the way that they used to use a newspaper or magazine as a 'barrier signal'. (Fox, 2008).
Aaron Smith conducted a national telephone survey of 2,277 adults during April 26-May 22, 2011 in United States of America. 1,522 interviews were conducted by landline phone, and 755 interviews were conducted by cell phone. Pew Research Center, Washington, DC published the report based on the above survey. The report confirmed that ‘Cell phones can help prevent unwanted personal interactions– 13% of cell owners pretended to be using their phone in order to avoid interacting with the people around them (Smith, 2011). He further adds that ‘Cell phones are useful for quick information retrieval (so much so that their absence can cause problems) – Half of all adult cell owners (51%) had used their phone at least once to get information they needed right away. One quarter (27%) said that they experienced a situation in which they had trouble doing something because they did not have their phone at hand.

Cell phones are an important tool in emergency situations – 40% of cell owners said that when they found themselves in an emergency situation, having their phone with them helped.

With advantages comes frustration – 20% of cell owners experienced frustration because their phone was taking too long to download something; 16% had difficulty reading something on their phone because the screen was too small; and 10% had difficulty entering a lot of text on their phone.’

Among other usage patterns it was observed that women tend to make slightly fewer calls with their cell phones than men – while 53% of women make and receive 5 calls or fewer per day, 43% of men say the same. Men are a bit more likely to make slightly more phone calls in a day; 26% of men send and receive 6 to 10 calls a day, while 20% of women exchange that many calls. Men and women are equally likely to be represented at the extreme high end of callers with 8% of men and 6% of women making and taking more than 30 calls a day.
Americans especially appreciate that their cell phones make them feel safer (91% of cell owners say that) and help them connect to friends and family to arrange plans (88% agree). Cell phones are such a vital part of Americans’ lives that many users will not be parted from their device, even as they sleep. (Lenhart, 2010, p. 2)

Cell phone today has become an inevitable, irreplaceable and integral part of modern lifestyle. Among all the cell phone users, young people are a significant user group of mobile phones and new content services (Oksman, 2003).

2.2 Cell phone and Generation Y:

When it comes to the use and experiment with the personal communication technology in general and cell phone in particular youngsters are more responsive and adventurous in trying the various functions or applications on mobile phones, such as alarm clock, calendar, radio, organizer, calculator, ringtones, and other features (Portus, 2008, p. 109). After a study conducted in MIT Media Lab USA, Sherry Turkle commented on the overall behaviour of the young population saying that the job of adolescence is centred around experimentation – with ideas, with people, with notions of self (Turkle, 2008, p. 125).

Nearly all teens are or would like to be passionate adopters of the mobile phone, and their interest runs in the full gamut of the nation’s ethnic and economic clusters. Teens living in urban areas are the most likely to own cell phones followed by their suburban counterparts. Text messaging, or SMS, is on the rise among American teens, although they still lag behind their European and Asian counterparts (Lenhart, Madden, & Hitlin, 2005). In Albuquerque, New Mexico, USA, Denise Bressler observed that, to the teenagers, the mobile phone is not a device for making phone calls, but rather, a ‘lifeline’ to the social network and an instrument for coordinating their everyday life (Bressler, 2006).
In Japan, it is observed that youth actively use mobile phones to overcome limitations inherent in their weak social status, their usage is highly courteous to institutions of home and school and the integrity of existing places. While enjoying mobile phone use to stay in touch with friends and current technology and fashion trends, young people also use these devices to push back at their own disenfranchised position within adult-controlled institutions and spaces of activity. Mobile phones are embedded in existing power-geometries and create new social disciplines and accountabilities (Ito, 2004).

In places like Saudi Arabia, where young men and women are culturally restrained from interacting face-to-face with each other the cell phone proved useful for social interaction (Theater, 2005). Rich Ling referred to Norwegian teenagers as ‘mobile super-users’ who are establishing the rules of this new mobile culture as temporary. They are the “archetypal mobile super-users”. To them, the mobile phone is not a device for making phone calls, but rather, a ‘lifeline’ to the social network and an instrument for coordinating their everyday life (Ling R., 2004).

Cell phone communication offers the young generation the ability to be closely connected to their social network when they are physically away through text messages or picture messages. Short messaging is also a social activity when youngsters are together physically and form a group. Teenagers are actively sharing their mobile communication with their co-present friends, often flashing the message on their screens to each other, or even passing around the phone (Rheingold, 2003).

Another plus point of the use of the mobile phone is that it helps teenagers overcome awkwardness and inhibitions and to develop social and communication skills as they communicate with more people, and more frequently, than they did before mobiles (Fox, 2008).
A study was conducted by Mesch and Talmud in Israel comparing Jewish and Arab young people and their cell phone behaviour. Adolescent members of the Western type of nuclear families including the Jewish young people having more individualistic orientation, tend to use cost effective communication technology. They agree that virtually created ties are weak and need face-to-face communication to convert them into stronger ones. On the other hand, Arab adolescents use cell phones in the framework of traditional enclave, more disposed to social control hence used to overcome the limitations of residential segregation and tie the cross gender lines and are not accepted in their collectivistic and traditional society (Mesch & Talmud, 2008, p. 323).

A study was carried out on Parent-Teen Cell Phone Survey which obtained telephone interviews with a nationally representative sample of 800 teens age 12-to-17 years-old and their parents living in the continental United States and on 9 focus groups conducted in 4 U.S. cities in June and October 2009 with teens between the ages of 12 and 18. The survey was conducted by Princeton Survey Research Associates International. The interviews were done in English by Princeton Data Source, LLC from June 26 to September 24, 2009. Statistical results are weighted to correct known demographic discrepancies. Study revealed that amongst its various uses mobiles are most famous for their SMS feature. Daily text messaging by teens to friends has increased rapidly since early 2008. Some 38% of teens were daily texters in February 2008, and that has risen to 54% of teens who use text daily in September 2009. Of the 75% of teens who own cell phones, 87% use text messaging at least occasionally. Among those teen texters, half of teens send 50 or more text messages a day, or 1,500 texts a month, and one in three send more than 100 texts a day, or more than 3,000 texts a month. 15% of teens who are texters send more than 200 texts a day, or more than 6,000 texts a month. Boys typically send and receive 30 texts a day; girls typically send and receive 80 messages per day. Teen texters ages 12-13 typically send and receive 20 texts a day. 14-17 year-old texters typically send and receive 60 text messages a day (Lenhart, 2010, p. 2).
Katz & Sugiyama pointed out that in 2001, in a focus group interview with college students at a US University, most of the participants said that they did not think of the mobile phone as a fashion item at first. However, a college student from Korea said that “for our culture, cell phone is a part of the fashion thing. Yes, especially for the younger generation, it kind of tells your personality, and it tells many things.” Interestingly, this statement prompted other participants to reconsider their original response and they started talking about how young people use the mobile phone for fashion.

In 2004, after surveying college students in the United States and Japan was conducted to demonstrate empirically the relationship between fashion attentiveness and the acquisition, use, and replacement of the mobile phone. The results suggested that young people use the mobile phone as a way of expressing their sense of self and perceive others through a ‘fashion’ lens. It was found that over half the students agreed with the statement that “my mobile phone should look cool” and of those about half also indicated that they notice the fashionableness of the mobile phones of their friends. (Katz & Sugiyama, 2005, p. 73)

Another study by Market Analysis Consumer Research Organisation, Mumbai about the mobile phone usage in Mumbai, revealed that 60% of the respondents reported the primary usage of mobile to keep in touch with friends and to call up their residence whenever they were out. The proportion of business calls was relatively low, (24%). Gender-wise analysis showed that the tendency to call home was more in females than in males while the habit of calling friends is more common in males, essentially teenagers, age group 15-19 years (MACRO, 2004, p. 21).
It was observed by Richard Ling a professor at the IT University of Copenhagen, Denmark and has a position as a sociologist at the Telenor Research Institute located near Oslo, Norway, that the youngsters had two urgent needs: identity and communication. First, an identity need, because youngsters need to know and feel who they are, young among youngsters, lovers and loved, in a unique, non-transferable and private space. There is the need to get away from their "hopelessly old-fashioned" parents (Richard Ling). Therefore, identity and privacy go together. Secondly, communication, because youngsters do need to build up their social structure made up of values, norms and behaviour--that is, the ingredients of culture. Furthermore, it has been found that the mobile telephone is an instrument -more for boys than for girls, it must be said at once-that helps organizing the everyday life, planning meetings and contacts, actions, happenings... thus helping to develop maturity and autonomy, the two adult features of utmost importance (Lorente, 2002, p. 5).

Students who do not own their personal phone consider themselves as worse off economically and academically than their phone-owning classmates. This important perceived lower socioeconomic status would confirm theories of the digital divide, whereby the absence of a technology (originally computers, later the Internet) leads to a marginalization within society. However, the data does not support actual marginalization, nor can it indicate any causal relationship; it merely refers to students’ perception of being at an inferior scholastic and economic level than their peers. (Kreutzer, 2009, p. 11)

In India the scene is different. Here, the mobile handset simultaneously denotes individuality and autonomy as well as family security and cohesiveness. This symbolic tension surrounding mobile phone use within middle-class Indian families can contribute to a broader understanding of the role of mediated communication devices in society (Donner, Rangaswamy, Wright, & Wei, 2008).
At the same time, the mobile is a powerful tool that can offer a measure of autonomy to children as well as link geographically dispersed families. Indian families are using mobiles in nuanced and sophisticated ways in order to go about their business of daily life while staying connected to one another (Donner, Rangaswamy, Wright, & Wei, 2008, p. 334).

In Mumbai – India, mobile phone users primarily use the mobile for being connected, their second option is security and third option is job requirement. Several measures indicated that a high level of social and psychological dependency on the mobile had been developed (Rao & Desai, 2008, p. 401). Parents in India, although burdened economically due to the mobile phone usage of their young children, feel emotionally secured and hence are ready to spend for it. The cell phone technology per se is for connectivity, but users do enjoy some extra gratifications like status and security from their mobile phones (Desai, 2006, pp. 231 - 256)

Seventeen-year-old university student Gagan Barmecha from Mumbai, India admits his phone is a style statement. "In some ways it's a status symbol. The better phone you have the richer you are." Gagan's classmate, Shruti Panchal, says she can't imagine life without a mobile phone. She said that mobile phone ring assures her that somebody cares for her in this world. Sixteen-year-old Saijul, one of the few urban teenagers not to have a mobile, says she feels left out of a privileged club. Students say "mobile cheating" is on the rise, that is the text messaging of answers to knotty exam questions. (Ahmed, 2004)

The camera phone study conducted by Hewlett Packard revealed that mobile users under 21 used their camera phones more than adults in connection with experiences they shared with other people. Specifically, youths took a greater number of pictures in order to enrich a shared, co-present experience. Pictures were then shared either in the moment or later as a memento. The study also indicated that youths exchanged more picture messages on average than the adults (Kindberg, Spasojevic, Fleck, & Sellen, 2004).
Young people use both, Information Communication Technology (PC or laptop) and Personal Communication Technology (cell phone) with equal efficiency and skill. They lead two lives simultaneously, online and offline. They are online often and for long periods, and often interchange their online and offline lives without difficulty, switching smoothly from a conversation ‘in real life’ (I R L) to a communication medium such as MSN, SMS or a mobile phone in order to continue the conversation. In addition to this interweaving of their online and offline worlds, the integration of ICT in the world of young people is also evident from the ease with which they use it (Duimel & Haan, 2009).

Teenagers are clearly a major market for mobile phones; some children today get mobile phones as early as elementary school (Bressler, mw2006/papers/bressler/bressler.html, 2006). In Taiwan, the cell phone market is youth-driven. Mobile phones are designed according to the true needs and experience of teenagers irrespective of marketing and promotional strategies. The small screen interface design is one of the newest research focuses of the human computer interaction. Due to the limited screen space, icons have been deemed as the dominant mode in the operational process of a mobile phone. These icon designs are specially made keeping in mind the teenager user group in Taiwan (Chung, Chau, Hsu, & Lee, 2007).

It is noticed that the mobile market is focusing more on multimedia messaging services because “most MMS buying activity is seen amongst 15 to 17 year olds”. It is also mentioned that, young people today “record the details of their lives on-line a lot and both sexes have a stronger urge than in previous times to share their experiences with friends” (Ernest-Jones, 2004).

Campbell cited that young people perceive the cell phone as not only a communication device but also as a fashion statement (Alexander 2000; Green 2003; Lobet-Maris 2003; Skog 2002).
A mobile communication study carried out by Green (2003) in the United Kingdom found that all teens interviewed had extensive knowledge of handset styles and designs, and that the youngest individuals were most interested in the fashion of the technology (Campbell S., 2008, p. 154). A Japanese study revealed that children with cell phones often don’t make friends with their less tech-savvy peers (excessive_cell_phone_use_at_nighttime_leaving_sleep_not_good_for_teenagers-360.html).

With the increase in the usage of cell phones, it has become a practice to send SMS or talk on the phone for hours together. Modern gadgets like cell phones not only have positive implications but it also has a negative side (Ayyangar, 2006, pp. 257 -271).

2.3 Cell phone and Market:

The youth market today is an extremely technology-savvy one, a segment of society that has been active in transforming the application and use of digital technologies in unprecedented ways. This market segment here defined as the range of teenagers and young adults between the ages of 12-29 is more comfortable with using the Internet, building websites, communicating via mobile phones and playing with digital gadgetry than any previous generation (Selian, 2004, p. 5).

Majority of the youth make their own decision while buying mobile handsets and only about 15% consult their parents before making the decision. Indian youth lead among those from other countries in that 40% of them hold price as the most important factor for buying a mobile device and more than 97% still use prepaid services. (Rastogi, 2011).
Companies have practically created a youth market by launching items like cool ring tones, games, screensavers, and e-mail alerts. As a result, more and more people in the under-30 age group are using wireless applications to organize their lives better. On the other hand, older people haven’t spent much time or money on mobile content. (MACRO, 2004, p. 12)

### 2.4 Cell phone and Its Negative Effects

With the advent of mobile telephones since 1956, there are about 1.6 billion users worldwide. In 2008, India had 287 million mobile phone users and nearly 1, 15,000 towers which emit electromagnetic radiations. By the end of 2010, the number of mobile phone users is estimated to rise to 500 million. (Talib, Patil, & Nikam, 2010). In June 2011, the overall wireless tele-density in India touched 71.59, according to TRAI Report. (Kumar, 2011).

The above mentioned statistical data has a hidden facet of the present day bio-sphere. Children today will experience previously unimaginable exposure to information-carrying radio waves from mobile phones because they start out using them at a very early age (Mercola, 2008).

Radiation from mobile phones delays and reduces sleep, and causes headaches and confusions, according to a new study. This research was sponsored by the mobile phone companies. It confirmed that using the handsets before bed causes people to take longer to reach the deeper stages of sleep and to spend less time in them, interfering with the body’s ability to repair damage suffered during the day.
The findings are especially alarming for children and teenagers, most of whom – surveys suggest – use their phones late at night and who especially need sleep. Their failure to get enough sleep can lead to mood and personality changes, Attention Deficit Hyperactivity Disorder (ADHD) – like symptoms, depression, lack of concentration and poor academic performance (Lean, 2008).

Although, both young people and parents felt that the mobile phone enhanced safety and described mobile phone as a ‘lifeline’, and a backup safety measure (Devitt & Roker, 2006) the cell phone dependency is not as innocent as it does look.

Unlike addiction to alcohol, drugs or even gambling, it can be hard to pinpoint problematic cell phone use (Huber, 2008). A British study found that 36% of college students surveyed said they could not get by without cell phone. A mobile phone in a trouser pocket and also sending of SMS keeping the cell phone under the school desk can influence fertility and should be completely avoided. Hence children under 16 years should not use mobile phones (Huber, 2008). A Study conducted by In a study conducted among school goers four percent (4%) of students said they thought it was acceptable to use a cell phone in class. Forty-one percent (41%) said they had used them to check messages in class. About half said use of text messaging was acceptable, while about a third considered playing games appropriate (Theater, 2005).

Francisca Lopez Torrecillas, lecturer at the department of Personality and Psychological Assessment and Treatment of the University of Granada (UGR) and an expert in psychological addictions, who carried out a fieldwork among several hundreds of 18 to 25-year-old young adults from the city of Granada, observed that Mobile-phone addiction in teenagers may cause severe psychological disorders (Torrecillas, 2007).
She warns of the danger that 40% of young adults admit using their mobile phones during more than four hours a day. Most of them state that they spend ‘several hours a day’ using their phones, be it talking, sending text messages or giving a so-called missed or drop calls. Many of these people take a real offence at not getting a missed call or a message answered, which makes them feel ‘deeply upset and sad.’ (Torrecillas, 2007). ‘Mobile addicts can be seriously affected at the psychological level but, as they don’t show any physical symptoms, their disorders go unnoticed to others. Mobile phone addicts tend to neglect obligations of important activities (e.g. job or studies), drift apart from friends and close family, deny the problem and think about the mobile phone constantly when they do not have it with them. ‘Most mobile-addicts are people with low self-esteem and problems to develop social relations, who feel the urge to be constantly connected and in contact with others.’ (Torrecillas, 2007). Mobile-addicts can become totally upset when deprived from some time, regardless of the reason, switching off their mobile phones cause them anxiety, irritability, sleep disorders or sleeplessness, and even shivering and digestive problems (Torrecillas, 2007).

The dangers of texting is listed down by Michael Tan (2001) as tendency to suffocate literacy by wreaking havoc on spelling and grammar, and ‘working in tandem with mindless computer games and Internet chat rooms, are eroding young people’s ability to communicate in the real world in real time’. Cell phones actually lead to ‘anti-social’ behaviour, as users ‘retreat to their own cocoons’ (Rao & Mendonza, 2005, p. 294).

As mentioned earlier, individuals who carry their familiar, comforting sounds with them on the cell phone gadget (Green & Haddon, 2009), may have to face unexpected and unfortunate hence uncalled for situations like the one reported in Times of India Pune Edition: ‘Earphones cost student his life on rail track’ was a front page headline in Times of India Pune Edition published on Thursday, October 20, 2011. This news item was continued on page 2 and contained a detail of how the accident took place.
A 20-year-old ITI student was run over by a train when he was crossing the tracks while listening to music using earphones and was fatally knocked down by an express train. The reporter also reported that on October 18, 2011 an engineering student was knocked down by a railway engine and the Railway Police suspect that he was also listening to music on earphones at the time of the accident. ‘We found a mobile phone in his pocket and the earphones were found on railway tracks,’ said the investigating officer. The same report mentioned about another such incidence that took place on February 16, 2011 when another 20-year-old boy was run over by an express train while he was sitting on the railway tracks and listening to music on the earphone and failed to see the approaching train. GRP Inspector Mahendra Rokade commented on such incidences as ‘Walking on railway tracks itself is an offence and people use mobile phones or earphones while breaking the law’ the report said (Reporter, 2011).

During the examination season Indian newspapers often report students using SMS or mobile earphone to cheat in examinations of various levels (Rao & Mendonza, 2005, p. 24). Children, when they are exposed to Information Technology Tools like Internet, cell phone etc., need protection as well as guidance to use because they have the amazing ability to learn and adopt new technology / environment (Ayyangar, 2006).

The widespread use of mobile communication devices has negatively affected the human race in three distinct ways: a) It has further destroyed the present tense by decreasing time spent in the moment, b) it has systematically reduced self-reliance, and c) it has decreased efficiency in the area of time management. (nulinegvvgv, 2007). Working in Agriculture industry as pollinator cum blogger, resident of Concord, North Carolina, United States, listed down the loss of opportunities in due course of life which are otherwise available to any common human being due to the use of the cell phone.
His blog post is summarised as follows:

Firstly, ergonomics classifies all the spaces into two categories-i) circulation space and ii) destination space. The space where human interest activities occur is called as destination space (kitchen, bedroom, study etc.) and the space which connects the destination spaces is the circulation space (drawing hall, passage, stair-case etc.). A person can enjoy being in the circulation area for a while but the comfort level is always in the destination area. Therefore a person always strives to reach the destination area; a goal which is somewhere else, time-wise and space-wise. With the introduction of the mobile phone in human life, the destination areas are getting converted into the circulation areas as cell phone use further increases the amount of time spent in circulating. The cell phone call removes the caller from his proposed task and momentarily commutes him to an alternative reality. Repeated transports diminish the capacity for the individual to focus and enjoy the task at hand.

Secondly, any major emergencies are often mitigated by someone’s ability and capacity to call for help. Cell phone enhances the competence of an individual to call louder for assistance. On the other hand, the experience of dealing with smaller problems helps a person develop the skills to cope up with this unpredictable world (nulinegvgv, 2007). One needs to develop the ability to tackle the situation by acquiring suitable knowledge of what to do when, mental alertness, willingness to do the right act at the right moment, and even the physical capacity to implement it. With the frequent use of cell phones people are losing the opportunity to sharpen this important life-skill and general competence.
Thirdly, people dependent on cell phones begin to give less consideration to those details that allow them to operate in a smooth and efficient manner (nulinegygv, 2007). The ability to talk with virtually anyone at virtually any time causes individuals not to consider sensible planning. This leads to more delays that would have been eliminated through thoughtful planning. The occasional delay that taught someone to be prudent with his/her use of time is eliminated. Time lost to subsequent delays caused by reliance on this ability occurs in small increments but when totalled up, exceeds the amount of time saved by cell phones. Net loss of time occurs.

Cellular technology has reduced the overall focus on life in the moment. It has diluted our ability to do for ourselves and has replaced effective time management with constant, chaotic communication (nulinegygv, 2007).

The above discussion gives a wide range of cell phone impacts on human life in general and on the young generation in particular. An in depth study of the literature review made the researcher realize that there is still abundant scope to study the impact of cell phone on the behavioural pattern of undergraduate students of Pune city. Hence she chose this topic for her Doctoral research.

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