

Privacy and Security Issues of Mobile Phone-The Case of Dhaka City, Bangladesh

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Abstract: The forecasted number of mobile phone users will be around 70 million at the end of 2011. This statement makes everybody remind the quick emergence of cell phone and shows the strong and fastest growth in mobile phone industry which also reminds the importance of mobile phone retailers. No doubt, that mobile phone services are an important contributor to the cash-strapped nation's economy. When this industry is booming out, the safety and security issue related to the use of mobile phone has come up with a great concern. The development of mobile technology has positioned privacy and security into risk to its users.) This risk hampers the daily economic activities thus the economic growth and development. This study concerns about how personal, social and economic safety and security, health and privacy issues can be hampered by the misuse of mobile phone (threat, harassment). This study also concerns whether crime committing has become more organized with the help of mobile technology. And whether there should be a clear law to protect general people from harassment through mobile phone. Lastly this study comes up with the decision that whether the misuse of mobile phone (threat, harassment), hampers economic activities which have an adverse affect on economic development. The target population for his study is the micro entrepreneurs in Dhaka who inseparably depend on mobile phone for their business communication as well as the users of mobile phone are the target population of this study. The sample size is one hundred and four (104) micro entrepreneurs and users in Dhaka. The structured questionnaire based on Likert scale has been used to ask the respondents to indicate their agreement or disagreement on a five point scale ranging from strongly agrees. The study comes up with the findings that misuse of mobile phone (threat, harassment), hampers economic activity thus have an adverse affect on economic development.

Key Words: *Mobile Phone, Privacy, Safety, Security*

1. Introduction

Using a cell phone is one of the first steps you must take to participate effectively in the emerging global economy. Gradually almost all the sectors are entering into the grips of hands of people through this device. With the development of this technology, a burning issue is coming out as caution, which is privacy and security. Privacy and security is not only the concern of the general people rather it is an issue for family, society, organization and country as well. This global issue is becoming one of the vital topics for the researchers all over the world. Tracking a person, secrecy of any place, organization or any country has become very much easier than it was in few years ago. The situation is still under control and in under tolerance level but the technological development of this sector shows its horrific vulnerability to be uncontrolled within few years disturbance through mobile phone has become a very common factor, in some cases, cheating has become easier using this technology. This study tried to find out the Privacy and Security Issues of Mobile Phone affecting the personal, social and especially the economic development. The main objective of this study to find out the Privacy and Security Issues and impact of mobile phone in economic and social life of people at Dhaka city of Bangladesh. To find out this we have considered following criteria's: (a) Security of mobile phone sets. (b) Personal safety and security, (c) Privacy, (d) Crime through mobile, (e) Expenditure of mobile phone. (f) Security of mobile phone balance services, (g) Affect of mobile phone in as a communication medium. (h) Effectiveness of mobile phone as a means of knowing the market condition, (i) the mobile phone operated home delivery services impact on life style. (j) Impact of mobile WAP services in day to day life

2. Literature Review

With the introduction and continuing technological advances of cellular phones, society has seen some dramatic changes. Cell phones have improved people's lives, made industrial and commercial enterprises more efficient, and affected the way we conduct our business and economy whether work related or socially. For ensuring this business and economic development, we need to ensure the safety and security in every aspect of personal, social, business and economic area. Cell phones have a big impact in the areas of security and safety. In one way cell phone can ensure this issue, at the same time it can also hampers. The safety and security issue of mobile phone may consider the Health, Safety/Security of Sets, Personal Safety/Security, Personal, Organizational and Country Privacy, Technology (Camera) , Economic Security of family and organization, Crime, Balance security of the subscriber, Law Disturbance and so on. There has been found a considerable speculation about the correlation between investments in telecommunications and economic development. Yet, there has been very little research on whether there is a connection between information and communication technologies (ICT) and economic growth (Bays et al., 1999).

With the help of Grameenphone, Grameen Telecom operates the national Village Phone program, alongside its own parent Grameen Bank and the International Finance Corporation (IFC), acting as the sole provider of telecommunications services to a number of rural areas in Bangladesh. Most Village Phone participants are women living in remote areas. Village Phone works as an owner-operated GSM payphone whereby, a borrower takes a BDT 12,000 (USD 200) loan from Grameen Bank to subscribe to GP (Grameenphone) and then trained on how to operate it and how to charge others to use it at a profit. As in September 2006, there are more than 255,000 Village Phones in operation in 55,000 villages around Bangladesh. This program has been replicated also in some other countries including in Uganda and Rwanda in Africa (Richardson *et al.*, 2000).

Now coming to the privacy and security issue, the right to privacy first became a serious issue concerning the mobile phone when the mobile camera was first launched. What provoked so much controversy was that, in being so small and inconspicuous and available to millions of mobile users, the camera phone could facilitate, and even encourage, the taking of covert and voyeuristic photos. Another concern is that the more features the phone accumulates – beside the camera, such as video messaging, music player, GPS and video games – the more desirable it becomes to the thief. Mobile phone theft has become a serious problem in the UK, with over 700,000 mobile phones reported stolen in 2007 alone. New mobile payment and ticketing (by Grameen Phone) solutions in Bangladesh demand secure transmission and storage of important financial data, and social data is compromised by content sharing applications and online gaming. As the mobile phone continues to offer features that are so new and innovative, the experience and expertise is not always in place to deal with all the potential security and safety problems.

Mobile telephones are at the centre of a rapidly growing crime wave, costing £100-200M (Mobile phone crime issue, parliament UK). With stolen mobiles even used as a criminal 'currency'. At the same time, the technological complexity of phone fraud makes detection and prosecution difficult. As a result, there are calls for new legislation to help curb the problem. Along with the great boom in mobile phone, use comes with the equal boom in mobile phone crimes. A staggering 15,000 handsets are believed to be stolen each month in the UK alone. Mobile phone theft takes up one third of all street crime in Britain & is soaring as well in third world countries (Dennis *et al.* 2003). As our mobile phones evolve into mobile computers eager to organize and facilitate every aspect of our waking lives, we are becoming increasingly dependent on their brilliant efficiency (Hardell et al., 2002a, b).

No one is more aware of this that the mobile industry itself who face a new set of security challenges every time a new feature is conceived. So the latest mobile phones may boast a mind boggling array of amazing features, but with every innovation comes with a new security risk. So these security and risks factors are one of the key obstacles for the development of economy. The higher mobile phone usage rates higher economic growth rates. It is possible, as more businesses rely on information and communication, access to information/communication technology would help trigger economic growth. But this triggering will snowed under the exploitation and maltreatment of mobile phone if the safety and security issues related using this palm machine is not confirmed.

3. Methodology

The research designed to explore the different aspect of Mobile Phone affecting the economic development-Bangladesh. The selection for the study site was the capital city 'Dhaka'. The selection made purposively on the assumption that most of the people in Bangladesh (especially in capital city Dhaka) are using the mobile phone and concerned about the safety and security issues of using this phone. A total of 104 interviews conducted among small and medium entrepreneurs like general store owners, different cloth store owners, restaurant owners etc. Because of budget constraints, a convenient sampling approach followed to collect the data. Data collected mainly through structured questionnaires. Additional data obtained through participant observation, study of press reports and websites, and study of some other secondary sources.

The questionnaire provided data about the concern of the safety and security issues of mobile phone of the mobile users. Likert scale used to ask the respondents to indicate their agreement or disagreement on a five point scale ranging from strongly agrees (5) to strongly disagree (1). To analyze the data SPSS is used Respondents' perception about safety and security issues considered on the basis of eleven major criteria., (a) Safety/Security of Sets, (b) Personal safety/Security,(c) Privacy: Personal, Organization and Country, (d) Technology (Camera),(e)wap services (f) Crime, (g) Economic Security of family and organization, (h) Balance security of the subscriber, (i) Law, (j) Disturbance, and (k) Privacy Vs Security. (l)Home services (m) Order Placement (n) Information

4. Findings and Discussion

This study divulges 44.2 percent of the young mobile users are satisfied with the internal security system that is available in the present day available sets and 31.7 percent were neutral in this point. Conversely, 74 percent of the users are worried about the numbers and information stored in the mobile sets to be misused in case of losing it, and 17.3 percent are neutral in this issue. In that way, 75 percent of the young mobile users are interested for the availability of a technology to obliterate the full set in case it is lost and 13.4 percent are not paying attention in this regard. By this means, 75 percent of the young mobile users are concerned about the originality of the mobile set that they are in use now and 20.2 percent are nonaligned in this point.

Table 1: Safety and Security of Mobile Set

Variables	Factors	Strongly agree/ agree	Neutral	Strongly disagree/ disagree
Safety/Security of set	Internal securities (e.g. password, PIN number etc) available for the mobile phones are sufficient	44.2	31.7	24
	Worried about the numbers and information stored in mobile phone to be misused in case of losing it	74	17.3	7.7
	Technology to destroy the full mobile set, in case it is lost	75	11.5	13.4

Personal Safety, Security and Privacy: As like safety and security of mobile sets using of mobile phone can risk one's personal safety and security as well. This study reveals that 61.6 percent of the mobile users think that using an expensive mobile set can put one's daily life at risk, and 30.8 percent were neutral in this point. Correspondingly 56.8 24 percent of the young respondents were impartial on this issue. In consequence, it can be said that the young mobile users of the country perceive the present environment of using mobile technology puts personal safety and security at risk.

Table 2: Personal Safety and Security

Variables	Factors	Strongly agree/ agree	Neutral	Strongly disagree / disagree
Personal Safety and Security	Concerned regarding mobile sets originality	75	20.2	4.8
	Holding an expensive mobile set puts our daily life at risk	61.6	30.8	7.7
	The MP3/ FM radio facilities of mobile phones risk our normal movement (Driving, Walking by the roadside)	56.8	24	19.2

With the issue of personal safety and security, the subject of privacy has also come out as a provocative question. In case of information stored in mobile sets, 68.3 percent of the young mobile users think that it can put one's privacy at risk and 23.1 percent of the respondents were neutral in this point. In the same way, 87.5 percent of the young mobile users think that tapping phone conversation technology hampers one's privacy and 11.5 percent of the respondents were neutral in this point. In another point 85.5 percent of the respondents think that strangers can harass one by making call in his or her mobile 12.5 percent of the respondents were neutral in this point. Correspondingly, 72.2 percent of the respondents think that privacy of mobile phone is not secured with the present technology available in the sets and 19.2 percent were neutral in this point. Conversely, 37.5 percent of the respondents think technology is not hampering person's privacy and 31.7 percent opposed the fact. On the contrary, 57.7 percent of the young mobile users think privacy and security of any organization gets into a risk when its employees use mobile phone and 25 percent were neutral in this spot. Likewise 65.4 percent of the respondents think that confidential information of a country can be leaked out easily with the availability of mobile phone and 26 percent of the respondents were neutral in this point.

Table 3: Privacy

Variables	Factors	Strongly agree/ agree	Neutral	Strongly disagree/ disagree
Privacy	Information stored in mobile set can put a person's privacy at risk	68.3	23.1	8.6
	The technology of tapping phone conversation can hamper privacy	87.5	11.5	1
	Strangers can harass one by making calls in his/her mobile	85.5	12.5	2
	Privacy of mobile phone is not secured with the present technology available in the sets	72.2	19.2	7.7
	Technology is not hampering person's privacy	37.5	30.8	31.7
	Privacy and Security of any organization gets into a risk when it's employees use mobile phone	57.7	25	17.3
	Confidential information of a country can be leaked out easily with the availability of mobile phone	65.4	26	8.6
	Mobile phone users should be restricted in the border areas of the country	48.1	24	27.8

Camera Technology: As a revolutionary part of mobile technology, mobile camera is emerging, with which the question of privacy and security smoldering. In this study 60.6 percent of the young respondents agreed that availability of mobile camera is helping to lose one's privacy and security, and 24 percent of the respondent did not agree on that statement. Consequently, 52.9 percent of the young mobile users think that

availability of mobile camera technology decreases the security of assets and 26 percent of the respondents were neutral in this point. There by the study shows that as per the opinion of the respondents mobile camera is an issue to think about as a threat of privacy and security.

Table 4: Camera Technology

Variables	Factors	Strongly agree/ agree	Neutral	Strongly disagree/ disagree
Camera Technology	With the availability of mobile camera, people are losing their privacy and security	60.6	15.4	24
	With the availability of mobile technology (e.g. Camera, MMS) the security of assets is decreasing	52.9	26	21.2

With the up gradation of technology crime committing is also becoming more organized and stronger. 83.7 percent of the respondents think that crime has become more organized with the help of mobile technology and 12.5 percent were in neutral position in this point. *This implies that most of the young mobile users perceive the mobile camera technology as a supporting tool for crime.*

Table 5: Crime

Variables	Factors	Strongly agree/ agree	Neutral	Strongly disagree/ disagree
Crime	Crime committing has become more organized with the help of mobile technology	83.7	12.5	2.9

Mobile technology has become an important economic expenditure factor for a family and organization. From the present study it is found that 49 percent of the young mobile users think that Mobile phones in the hands of all the family members increases economic burden of the family because of too much talking and 36.5 percent were in neutral position in this fact. Likewise 62.5 percent of the respondents think that often losing a mobile phone has become an economic loss for a family; conversely, 32.7 percent of the young mobile users were in neutral position in this point. Likewise 66.3 percent of the respondents think that employees misuse their mobile connection to talk unnecessarily when it is given by their organization in contrary 25 percent did not agree in this point. Correspondingly 46.2 percent of the young mobile users think that employee's productivity goes down when they get a mobile connection with a huge balance from their employer in contrary 29.8 percent were in neutral position on this point.

Table 6: Economic Security of Family and Organization

Variables	Factors	Strongly agree/ agree	Neutral	Strongly disagree/ disagree
Economic Security of family and organization	Mobile phones in the hands of all the family members increases economic burden of the family because of too much talking	49	36.5	13.5
	Often losing a mobile phone has become an economic loss for a family	62.5	25	11.5
	Employees misuse their mobile connection to talk unnecessarily when it is given by their organization	66.3	25	6.7
	Employee's productivity goes down when they get a mobile connection with a huge balance from their employer	46.2	29.8	23

Mobile users often face problems in terms of mobile balance, it is claimed that there is balance cut problem even when the subscriber (from FGD) does not use it. The study shows that 48.1 percent of the young users agrees on the point that, sometimes, mobile balance gets slashed down even when it is not used to call, SMS/MMS or for any other purposes, 30.8 percent of the young users were in neutral position in this point. 72.1 percent thinks that mobile companies are offering too much complicated packages, which misleads one to be clear about call rate or other charges and 19.2 percent were in neutral position in this point.

Table 7: Balance security of the subscribers

Variables	Factors	Strongly agree/ agree	Neutral	Strongly disagree/ disagree
Balance security of the subscribers	Some times, mobile balance gets slashed down even when it is not used to call, SMS/MMS or for any other purposes	48.1	30.8	19.3
	Mobile companies are offering too much complicated packages, which misleads one to be clear about call rate or other charges	72.1	19.2	7.7

From all the problems, there comes the point of law to minimize them through regulation control. In this point, 62.5 percent of the young mobile users think that there should be a law to protect general people from misleading packages or offers in contrary 32.7 percent of the respondents were in neutral position. Likewise 83.7 percent of the young mobile users think that there should be clear law to protect general people from harassment through mobile phone and in contrary 12.5 percent were in neutral position. This implies that the young mobile users feel the importance of law to protect themselves from several types' of harassments from mobile companies and mobile harassers.

Table 8: Law

Variables	Factors	Strongly agree/ agree	Neutral	Strongly disagree/ disagree
Law	There should be a law to protect general people from misleading packages or offers	62.5	32.7	3.9
	There should be a clear law to protect general people from harassment through mobile phone	83.7	12.5	2.9

With the up gradation of mobile technology, it has also become very simple to get access of any person much more easily than it was before, as a result disturbing someone has also become easier. 54.8 percent of the young respondent thinks that people get disturbed at midnight by unnecessary mobile call from friends and in contrary 23.1 percent was in neutral position in this point. Likewise 66.4 percent of the young mobile users agree that some times, people are disturbed by SMS from unknown numbers in contrary 20.2 percent were in neutral position in this issue. In the same way, 45.2 percent of the young mobile users think that MMS is going to be another technology to disturb one in recent days, in opposing that 31.7 percent were in neutral position in this point. Hence, it can be said that most of the young mobile users of Dhaka city think that mobile technology has made it easy to disturb someone much more easily than it was before in a secret manner.

Table 9: Disturbance

Variables	Factors	Strongly agree/ agree	Neutral	Strongly disagree/ disagree
Disturbance	People get disturbed at midnight by unnecessary mobile call from friends	54.8	23.1	22.1
	Some times, people are disturbed by SMS from unknown numbers	66.4	20.2	13.4
	MMS is going to be another technology to disturb one in recent days	45.2	31.7	23.1

Even though there are lots of problems in mobile technology that cause trouble, there are some very essential supports in it especially in security terms. The study shows that 50 percent of the young mobile users think that mobile technology is giving people more security of life than risks in contrast to it 33.7 percent were in a neutral position on this point. Likewise 43.2 percent of the young mobile users don't think that mobile technology is hampering the privacy of life in all aspects and in contrast 29.8 think it is hampering the privacy of life in all aspects. Similarly, 73 percent of the young mobile users think that, it is to be bound to accept mobile technology as a demand of time though there is a security and privacy problem and in contrast 18.3 percent were in a neutral position. Hence, it can be concluded here that mobile technology is putting us in several privacy and security problems but we need to accept it as a demand of time.

Table 10: Privacy and Security

Variables	Factors	Strongly agree/ agree	Neutral	Strongly disagree/ disagree
Privacy Vs Security	Mobile technology is giving people more security of life than risks	50	33.7	16.3
	Mobile technology is hampering the privacy of life in all aspects	29.8	26.9	43.2
	It is to be bound to accept mobile technology as a demand of time though there is security and privacy problem	73	18.3	8.7

Though mobile technology brings complication in human life but it also eases the difficulty in various ways. The study shows that 50 percent of the mobile users think that mobile technology operated home delivery services eases various difficulties of daily life. 16.3% people think Mobile operated home delivery services of life than risks in contrast to it 33.7 percent were in a neutral position on this point. Likewise 43.2 percent of the young mobile users don't think that mobile technology is hampering the privacy of life in all aspects and in contrast 29.8 think it is hampering the privacy of life in all aspects. Similarly, 73 percent of the young mobile users think that, it is to be bound to accept mobile technology as a demand of time though there is a security and privacy problem and in contrast 18.3 percent were in a neutral position. Hence, it can be concluded here that mobile technology is putting us in several privacy and security problems but we need to accept it as a demand of time.

Table 11: Home Services

Variables	Factors	Strongly agree/ agree	Neutral	Strongly disagree/ disagree
Home Services	Mobile technology operated Home services eases various difficulty of day to day life	50	33.7	16.3
	Mobile technology operated Home services brings new opportunity in business	43.2	26.9	29.8
	Mobile technology operated Home services giving pace in your life	73	18.3	8.7

5. Conclusion and Recommendations

From the above findings and discussion, we may conclude that this study divulges 44.2 percent of the young mobile users are satisfied with the internal security system that is available in the present day available sets regarding safety /security of set. Respectively other issues are stated consecutively, personal safety and security study reveals that 61.6 percent of the mobile users think that expensive mobile set can put one's daily life at risk. In case of information stored in mobile sets 68.3 percent of the young mobile think that it can put one's privacy at risk. The study shows that as per the opinion of the respondents mobile camera is an issue to think about as a threat of privacy and security. This implies that most of the young mobile users perceive the mobile camera technology as a supporting tool for crime. The present study it is found that 49 percent of the young mobile users think that Mobile phones in the hands of all the family members increases

economic burden of the family. Mobile users often face problems in terms of mobile balance, 72.1 percent thinks that mobile companies are offering too much complicated packages, which misleads one to be clear about call rate or other charge. Study on law implies that the young mobile users feel the importance of law to protect themselves from several types' of harassments from mobile companies and mobile harassers. It can be said that most of the young mobile users of Dhaka city think that mobile technology has made it easy to disturb some one much more easily than it was before in a secret manner in respect of disturbance findings. Study shows that 50 percent of the young mobile users think that mobile technology is giving people more security of life than risk when the question raised Privacy Vs Security. This is last findings but not the list, though mobile technology brings complicity in human life but it also easing the difficulty in various ways, 43.2 percent of the young mobile users don't think that mobile technology is hampering the privacy of life in all aspects.

There are some very few revolutionary inventions towards the development of civilization like, wheel, engine and computer. The last addition of revolutionary invention is may be the mobile technology. It has managed to bring the world in one's grip just in seconds. The research shows that in some aspects, the mobile technology is risking the privacy and security of individuals, but it is impossible to ignore in our everyday movements. We have to carry the technology as well as the risk of losing privacy and security. As per the subscribers' opinion, the mobile technology is giving us much more than the things it is putting into risks. The research also finds out that some of the actions to be taken as well to avoid the risks of loosing privacy and security, like, enforcing and updating the existing law in this field and improving the technology that causes health problem in long term. According to the users, the present law is not able to protect the privacy and security of the subscribers, so there is a need of development of new "Mobile Technology Law".

Given the above, here are some steps to be taken by the Government policy makers in Bangladesh to assist in the diffusion of E-Government services in Bangladesh:

- Technology should be improved so that it can avoid the long term health problem
- The mobile companies should follow the existing law to avoid the risk of health and security and privacy
- Every government should have a special unit of expertise to regulate this industry
- Any new sensitive feature of mobile sets should be tested and approved by the government before launch
- There should be an international regulatory body for mobile industry specially
- There should be strict law to protect privacy of people that could be hampered by mobile technology
- Every family can develop there own culture in case of using the mobile phone and to avoid the extra economic loss
- Country economic security is highly involved with this technology so the government should highly focus on the mobile industry

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