Vol-I

Socio-Economic Impact of Telecommunication Growth and Indicators Forecasting

Pakistan Telecommunication Authority



:

Telecom Engineering And Consultancy House
(Pvt) Limited Islamabad

Acronyms

3G	Third Generation
4G	Fourth Generation
AJ&K	Azad Jammu and Kashmir
ADSL	Asymmetrical Digital Subscriber Line
ATM	Auto Teller Machine
BB	Broadband
BOP	Balance of Payments
CDMA	Code Division Multiple Access
CED	Central Excise Duty
CMT	Cellular Mobile Telephony
CPE	Customer Premises Equipment
CPI	Consumer Price Index
CRR	Cash Reserve Ratio
CMO	Cellular Mobile Operator
CCOR	Committee on the Regulatory Bodies
CCRB	Cabinet Committee on Regulatory Body
DSL	Digital Subscriber Line
EDGE	Enhanced Data Rates for GSM Evolution
ECO	Economic Cooperation Organization
FAB	Frequency Allocation Board
FANA	Federally Administered Northern Areas
FATA	Federally Administered Tribal Area
FLL	Fixed Local Loop
FBS	Federal Bureau of Statistics
FED	Federal Excise Duty
FTTH	Fibre To The Home
FDI	Foreign Direct Investment
FAB	Frequency Allocation Board
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GHz	Giga Hertz
FNO	Fixed Network Operator
GoP	Government of Pakistan
GST	General Sales Tax
GSM	Global Mobile System
GPRS	General Packet Radio Service
ICT	Information Communication Technology
IPTV	Internet Protocol Television
ISP	Internet Service Provider
IT	Information Technology
ITU	International Telecommunication Union
LDI	Long Distance International

LL	Local Loop
LLO	Local Loop Operator
MMS	Multi Messages Services
MNP	Mobile Number Portability
MOIT	Ministry of Information Technology & Telecommunication
MRTB	Market Related Treasury Bill
NWD	Nation Wide Dialling
NWFP	North West Frontier Province
NADRA	National Database and Registration Authority
NDA	Net Domestic Assets
NGO	Non Governmental Organization
NDA	Net Domestic Assets
NTC	National Telecommunication Corporation
NGN	Next Generation Network
NEC	Nippon Electric Company
OFAN	Optical Fibre Access Network
OFS	Optical Fibre System
OIC	Organization of the Islamic Conference
OSP	Out Side Plant
PoPs	Point of Presence
PCO	Public Call Office
POT	Plain Old Telephone
PRN	Premium Rate Number
PRSP	Poverty Reduction Strategy Papers
PC	Personal Computer
PTA	Pakistan Telecommunication Authority
PTCL	Pakistan Telecommunication Company Limited
Q-Tel	Qatar Telecom
QoS	Quality of Service
R & D	Research & Development
SAARC	South Asian Association for Regional Cooperation
SBP	State Bank of Pakistan
SIM	Subscriber Identity Module
SMS	Short Message Service
SCO	Special Communications Organization
SLR	Statutory Liquidity Requirement
SME	Small Medium Enterprise
SMP	Significant Market Player
SPI	Sensitive Price Index
SRO	Statutory Regulatory Order
STM	Synchronous Transport Module
TEACH	Telecommunication Engineering and Consultancy House
TFN	Toll Free Number
TOR	Terms of Reference
T&T Dept.	Telegraph & Telephone Department

TMI	Telecom Malaysia International
UAN	Universal Access Number
UK	United Kingdom
USF	Universal Service Fund
VSS	Voluntary Separation Scheme
VAT	Value Added Tax
VTS	Vehicle Tracking System
VoIP	Voice over Internet Protocol
Wi-Fi	Wireless Fidelity
WiMax	Worldwide Interoperability for Microwave Access
WLL	Wireless Local Loop
WHT	With Holding Tax
WTO	World Trade Organization

Foreword

Pakistan Telecommunication Authority has sponsored a number of studies in the telecommunication field to help it perform the mandate assigned to for effective regulation of the telecommunication sector. While most studies relate to an analysis of the technical issues of relevance in the sector, some studies have dealt with the social and economic impact of developments in the telecommunication sector. The present report is the second study in this area. An attempt is made to extend the analysis provided in an earlier study on the socio-economic impact of the mobile telephony. The analysis presented the socio economic impact of the mobile growth and telecommunication indicators forecasting.

The present report presents findings on the impact of all telecommunication services like the fixed local loop, wireless local loop, mobile phone, Internet and broadband. The socio economic impact of the vehicle tracking system, payphones, long distance international, universal access number and other premium rate services is also provided in the report.

The study generates a large data base of relevance to study the impact of different telecommunication services on social and economic development. Data collection is based on a country wide survey of 10,000 respondents in the non-targeted survey. It also provided data as well as analysis of 4000 households and 1000 business establishments. The large size of sample guarantees that the findings are representative at the country level. The results also provide a true picture of the benefits of the telecommunication services on different social groups and economic sectors.

In addition to the chapters that deal with the impact of telecommunication services on the economy, the report includes special chapters dealing with current issues relating to performance in different sectors, impact on gender, poverty, rural development and small and medium enterprises (SME's).

For each typical issue the analysis on how availability of different modern telecommunication services enables different sectors to play due role in support of the overall social and economic development is provided.

In the second part of the report, forecasts of main telecommunication indicators have been provided. These forecasts are based on past trends of various services. Amount of required investment has also been estimated. It is interesting to note that a sizeable amount of funds are needed to finance the expansion and modernization of the telecommunication sector. Given the large favourable impact, the investment in the telecommunication sector should have high rates of return.

The report concludes with a detailed discussion in support of accelerated social and economic developments. It is hoped that the analysis provided in this report will be utilized by the policy makers, planners and investors in future decisions.

The need for further detailed studies on the impact of the economic developments on poverty, women empowerment and rural development is obvious. It is suggested that a research based approach be adopted to address such issues.

Telecom Engineering And Consultancy House (TEACH) expresses its gratitude to Pakistan Telecommunication Authority for not only sponsoring this study but for making available the background information and data.

I would like also to put on record my appreciation of hard work put in by TEACH staff. Without their help and untiring efforts, it would not have been possible to complete the assignment. Thanks are also due to representatives of the industry and other stake holders who have cooperated with the TEACH team in many ways. I would like to thank Dr. Mohammed Yaseen Chairman, Pakistan Telecommunication Authority (PTA) and his team of professionals and experts who were always available to provide highly valuable input.

An executive summary containing key findings and major recommendations should be useful to the policy makers.

Mian Muhammad Javed
Chairman/Chief Executive Officer
TEACH (Pvt) Limited

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Executive Summary

Pakistan Telecommunication Authority (PTA) had contracted out a research study on "Socio-Economic Impact of Telecommunication Growth and Indicators Forecasting" to Telecommunication Engineering and Consultancy House (Pvt.) Limited Islamabad [TEACH]. The Term of Reference of the study had envisaged collection of primary data through a targeted survey of households and business enterprises and a non-targeted survey.

The sample of the non-targeted survey was to be 10,000 respondents. The sample of the targeted survey was to be 4113 households and 1171 business working enterprises. In addition, the analysis of the primary data generated by the two surveys, secondary data was also used to address some of the Term of Reference. Case studies and Focus Group Discussions were also carried out.

1. Socio-Economic Impact / Benefits

On an average, a non-targeted respondent had identified 5 different benefits of FLL/WLL, 6 different benefits of Mobile phone and 4 different benefits of internet such as usefulness in general interaction, business / trade, social / cultural sphere, family cohesion and education. The highest benefit of internet is reported for educational purpose.

The business / working group respondents reported positive impact of telecommunication service for increase in income, savings in time and transportation cost and improved organizational efficiency.

The business / working group reported that telecommunication services had reduced the practice of letter writing, face to face meetings and travelling. They also mentioned that telecommunication services have made an impact on their various aspects of life by broadening their social circle, helping in family cohesion, education and increasing access to doctor/health services. This impact is noticed 'very much' through use of mobile phone. Further, telecommunication services benefited users in various ways such as solving their day to day problems, searching for work / livelihood, increase work efficiency, finding new customers, increase in sales and turnover, increase in income, helped in finding instant market / price information and in better interaction with utility departments. The telecommunication services also helped in remittances, reduction in transaction time of deals and in crop and live stock management.

The benefits of value added services are estimated to be substantial. Regarding LDI, one-fifth of business / working personnel indicated large impact on business increase through overseas contacts, increase in family contact, reduction in business travel and expenditure on telecommunication services. Around half of the respondents had experienced no impact of Universal Access Number (UAN). Whereas more than one-quarter best experienced substantial position impact.

Large impact was also reported in the use of Premium Rate Number (PRN) and Toll Free Number (TFN).

The households gave various responses through which the telecommunication services (FLL/WLL, Mobile and Internet) helped / improved their social, cultural, family, economic status, savings, health, employment and other matters. Respondents mostly rated the impact as “some what” and “very much”. “No impact” was reported by a small percentage. Among the three different types of telecommunication i.e. FLL/WLL, Mobile and Internet users, the highest impact has been reported by Mobile users particularly in case of income increase.

The household respondents were asked about different types of negative impact (disadvantages of phone / internet services). They identified many disadvantages such as use of mobile being dangerous while driving; danger of its theft / robbery, increase in expenses, misuse for anti-social activities and wastage of time.

The above narrated findings were further substantiated by means of Chi-square tests and correlation matrices and econometric models (logistic regression). A significant association and correlation has been noted. The econometric model showed that income plays significant role in the use of telecommunication services. The correlation matrices and the econometric model (logistic regression) had indicated significant association among various variables

The Focus Group Discussion was held with telecommunication managers, low income working persons and SME representatives. There was a broad consensus that mobile phone has been the most popular facility which is quite useful in increasing efficiency at work, finding new customers and for increase in sales, income and instant market information. They also informed that internet has been a useful tool for increasing efficiency, finding new customers and for increase in sales and income. The SMEs have also benefited through improving telecommunication services in their business, shopping and office related activities. They experienced a positive impact on income increase, savings in time and transportation and improving organizational capacity as well as efficiency. They found UAN and PRS useful for increasing in volume of business.

2. Micro Level Findings

There has been universal knowledge / awareness of the telecommunication services in rural and urban areas and among males and females in the country. The use has been also universal particularly of mobile phone. The main reason for not having telecommunication services was cited as non-affordability of services or they do not have its use. Majority used the PCO/Payphone facility in case phone was not available. The business / working personnel and household survey respondents indicated a huge (percent) demand of telecommunication services in future. On an average each non-targeted respondent wanted to have

more than one (average 1.5) different telecommunication services in future; the highest being the desire for having mobile phone.

Monthly expenditure on telecommunication services upto Rs.500 was more common in respect of household respondents while for business / working personnel where it was beyond more common expenditure of Rs.500.

On an average one respondent gave 3 different purposes of making a FLL/WLL calls and 4 to 6 different reasons of making mobile phone calls which were mostly related to family matters, social contact, work, business and health / medical matters. The reason for using WLL was its better performance in quality wise and its primary use was for making phone calls.

On an average a mobile phone user mentioned 3 different purposes in addition to making a phone call which primarily related to use of SMS, as calculator and for alarm etc.

The household mobile users reported that they made and received more calls per day than FLL/WLL users. The mobile household users besides making calls primarily use mobile for SMS, alarm, radio, calendar and camera purposes, etc.

The business mobile users reported having sent on an average 12 and received 14 SMS per day and they preferred English language for its use. Most of the SMS were related to personal, family, social and business matters. The household mobile phone users daily send 14 and receive 16 SMS. Females send / receive more messages than males. On an average household gave 2 to 6 different purposes of sending / receiving SMS. Most of them used it for personal, family and education purposes. Females use it more for personal and educational purposes than males.

On an average a household respondent had more than one (1.5) companies connection dominated by Mobilink, followed by Ufone and Telenor. Moreover one business respondent reported to have 1.5 mobile connections while having on an average 1.3 handsets. Sixty percent respondents reported to purchase mobile phone from any shop. The household respondents reported that more female (48 percent) bought it from authorized dealer than male (34 percent).

The business respondent reported the average price for buying a Mobile phone as Rs.1755 while household reported as Rs 4935. Females desired to purchase expensive phones than males. Nokia was the most popular handset in use by respondents in the country. On an average in each household two males and one female family member had an additional mobile phone.

Less than one-third of the business respondents had the knowledge of Mobile Number Portability (MNP). However a very small number were using it. Almost all business respondents mentioned “no problem” with its use

In household survey on an average one internet user gave more than one place of its use. Almost two-third respondents mentioned various places of internet use, with prominent use at offices, education institutions, homes and Net Cafes. It is found that on an average 2 to 3 persons share a computer at homes and 4 persons share at offices. The business / working personnel internet users on an average gave more than one (average 1.7) different purposes of internet use which varied from e-mails to office work and chatting while household respondents also gave more than one (average 1.4) purpose of internet use. Majority used it for e-mail. Females use it more for education purposes than males.

Only 40 percent of the business / working personnel and 30 percent household respondents indicated type of internet connection used by them. Majority of them were using dialup connections. About three-fifth gave various reasons for not using the internet with majority saying they don’t have its need. About one-sixth of the business respondents reported their intention to have internet in future

The business/working personnel use computer at their residences and at offices. They use it primarily for professional work followed by for internet and sports/ entertainment. Almost 30 percent business / working personnel and 26 percent households showed their intention to buy computer in future.

The Long Distance International (LDI) calling cards use has been reported by one sixth of the business / working personnel.

Around three-fifths household reported facing problems in the disadvantages of telecommunication services, such as coverage problem, speech not clear, congestion/line busy, frequent call disconnection, internet disconnection problem, help line / directory assistance problems.

The survey respondents made several suggestions about various aspects of telecommunication services such as need to reduce call rates and ensure clarity of tariff packages including hidden charges and taxes etc.

The restoration of out of order FLL phone takes more time (on an average five days) for household phone than for business / working personnel phone, which takes on an average 2.5 days to restore.

3. Macro Level Findings

The telecommunication industry and its services have shown a rapid growth resulting in constant revenue increase. Its positive impact on the industrial, commercial and economy has been significant. It has attracted sizeable amount of

Foreign Direct Investment (FDI). Several major telecommunication operators like SingTel, Q-Tel, Omantel and China Mobile have invested and bought equity in local companies. This has further strengthened the Pakistan telecommunication market.

The revenue generated by the telecommunication sector has increased significantly over the past eight years from Rs.68.67 billion in 2001-02 to Rs.278.46 billion in 2007-08. Telecommunication industry has particularly made a significant impact on direct and indirect employment generation which increased to around 1.8 million in 2007-08.

The increased impact and benefits of telecommunication services has also been felt in bridging the gender and rural-urban gap in the country particularly in shape of awareness and use. This was also indirectly brought forward in a meeting in Focus Group Discussion and through various case studies.

The telecommunication indicators and forecasting suggest that FLL would increase from 4.4 million in 2008-09 to 7.45 million in 2017-18. The WLL would increase from 2.7 million in 2008-09 to 4.4 million in 2017-18. The Mobile phone would increase from 88 million in 2008-09 to about 149 million in ten year's time i.e. in the year 2017-18 which would increase teledensity to around 80 percent. Similarly the internet connection would increase from 4.4 million in 2008-09 to 8.7 million in 2017-18 and its users would increase from 17.5 million in 2008-09 to 42.5 million in 2017-18. The number of broadband connections is expected to increase from 0.25 million in 2008-09 to 2.5 million in 2017-18. The PCO/Payphones are likely to increase from 0.52 million in 2008-09 to 0.78 million in 2017-18. The users of Vehicle Tracking System (VTS) would increase from 0.30 million in 2008-09 to 0.75 million in 2017-18.

The telecommunication share in the Foreign Direct Investment increased from 1.3 percent in 2001-02 to 54 percent in 2005-06 and averaged more than 35 percent from 2003-04 onward and it reached to $1,439 million in 2007-08. The total telecommunication imports (Mobile sets and equipment) increased from $379 million in 2003-04 to $1,331 million in 2007-08.

The report also attempted to compare telecommunication sector Indicators of Pakistan with countries of South Asia and other selected countries to compare Pakistan standing, viz.a.viz other countries with which it has geographical, cultura, economic and / or political similarities.

The policy and regulatory measures adopted by PTA have been encouraging and have been helpful for the rapid growth of telecommunication sector with emphasis on pro-poor, pro-gender and pro-marginalized policy. Main player in this aspect has been mobile phone which will continue to perform a catalyst role in the future development of telecommunication sector so as to maximize the socio-economic benefits for all segments of the population.

Chapter-1

Introduction

1.0. Introduction

In today's world the main driver of general awareness and level of information in any society is the level of literacy. Unfortunately Pakistan is not well placed when one uses this criterion. The literacy rate is low for the female population. Of late, the recourse to the use of Information and Communication Technology (ICT) has been regarded as an effective means of carrying and disseminating information. In Pakistan, ICT has expanded in coverage, diversity and access rapidly. Media comprising of private TV channels, Radio broadcast stations and cable TV network have been very pro-active and have raised the level of awareness. The progress in the electronic media has coincided with an expansion in the provision of telecommunication services. The use of ICTs in these interrelated sectors contributed to rapid growth in these sectors. Telecommunication operators have financed the nascent private media outlets through aggressive and generous advertisement expenditure. The media, in turn has been instrumental in spreading awareness and knowledge about the availability of a variety of telecommunication services and the modern gadgets. There has been wide spread recognition of the usefulness of different telecommunication services in both urban and rural areas. The female population in each of four provinces of Pakistan has also been benefiting from different telecommunication services. In order to assess the level of awareness and extent of use of different telecommunication services and the ownership pattern of the different gadgets and ownership a large survey was carried out. Response from 10,000 respondents in the non-targeted survey were obtained to find out the perception of different socio-economic groups in the society about the benefits of different telecommunication services. A target survey with a sample size of 5,000 respondents was also conducted to assess the pattern of access of different telecommunication services by different socio-economic groups. Only a brief overview of the main findings is provided in this chapter.

1.1 Awareness of telecommunication services

A vast majority of people are found to be aware of the twelve different telecommunication services like FLL, WLL, Mobile phone and the Internet. A large population has been making use of one or more of the services even if they don't own it. The ownership of gadgets helps in accessing different services. In view of an active presence of business entities which provide different services by charging for the use of these services, the access of people to the telecommunication services has expanded rapidly. Work place, neighbours, friends, relatives and public call offices allow people an opportunity to use the services. Irrespective of educational background, literacy level and social status, people in Pakistan are aware of the usefulness of modern telecommunication services. Telephone which was a privilege for elites only 25 years ago, has now become an essential service of all and sundry irrespective of the income level. Mobile phones have been instrumental in expanding access to the telephone

facility. In the male dominating society, telecommunication awareness and its use bridges the gender divide. Even in respect of the latest telecommunication facility like internet, female awareness is almost at par with that of males. Same is the case about personal computer (PCs). In fact, female fair marginally better in having knowledge about PCs. While higher use of some of the telecommunication services is expected to improve the status of female in society, it needs to be pointed out that there are some telecommunication services which currently are not so widely known.

Awareness of fax is low. The main reason for low use of fax is its low penetration. This is so because fax is used mainly in offices. Low degree of awareness is also found for WiMax / Broadband and vehicle tracking. However, reasons for the low use are different than that of fax. WiMax / Broadband services have been introduced only recently while vehicle tracking is being used by the niche market of vehicle owners.

High level of awareness for some of the telecommunication services is indicative of the fact that there is a lot of potential for demand for the telecommunication services. The high awareness levels have come about mainly by recourse to free market mechanism introduced by the private sector. Deregulation and liberalization of telecommunication sector have increased competition. Effective advertisement campaigns have been launched by the competing players in the print and electronic media. Credit also goes to media managers who have been innovative in using TV and Billboard advertisements which have attracted a large segment of society. The media campaign has succeeded in generating wide spread awareness. In addition, the use of mobile phone has also become a status symbol.

Ownership of different telecommunication gadgets has expanded rapidly. Mobile phones have registered a sharp increase whereas subscribers of WLL phone have shown a steady increase. Most people are satisfied with only one type of connection i.e. they have either fixed phone or WLL phone or mobile phone. Dual ownership i.e. same person having a FLL phone, WLL phone and mobile phone is also not uncommon. Pakistan differs from the developed markets of Europe and Japan where fixed phone density was already high when mobile era started and people bought mobile phones as an additional facility. In Pakistan mobile phone became popular as fixed phones did not meet the requirements of people. Mobile phone service is available at places where there was no facility of fixed telephony. The mobile phones were also affordable. The mobile phones were also less expensive in relative terms. In fact the wide spread use of mobile phone has resulted in the decline in the use of fixed phones. However, there has been a steady increase in the number of WLL phones. Relatively newer services like internet, broadband including WiMax and vehicle tracking etc. are registering steady growth.

The awareness level is found to be almost universal. The knowledge about different telecommunication services and gadgets is high in both rural as well as urban areas and among males and females. Figure-1.1 and Figure-1.2 show the status of knowledge about different telecommunication services.

Figure-1.1
Knowledge about Telecommunication Services, Pakistan, 2008

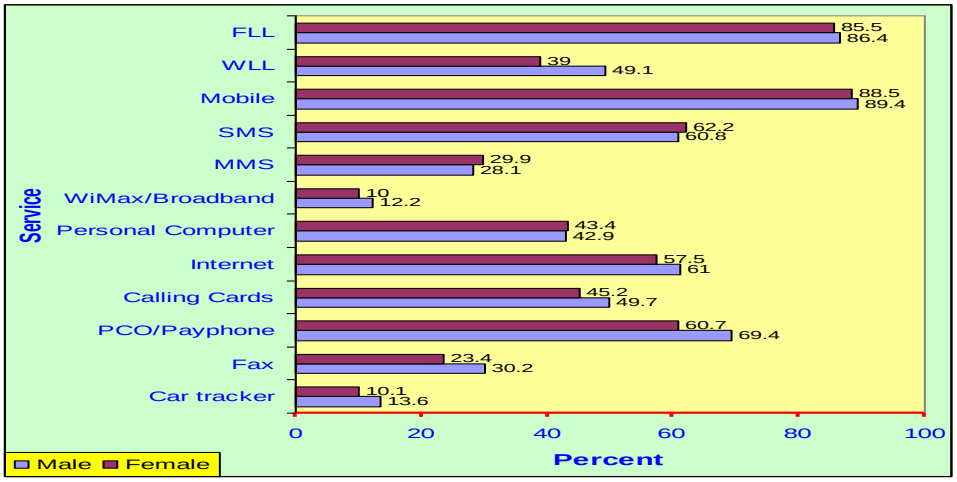
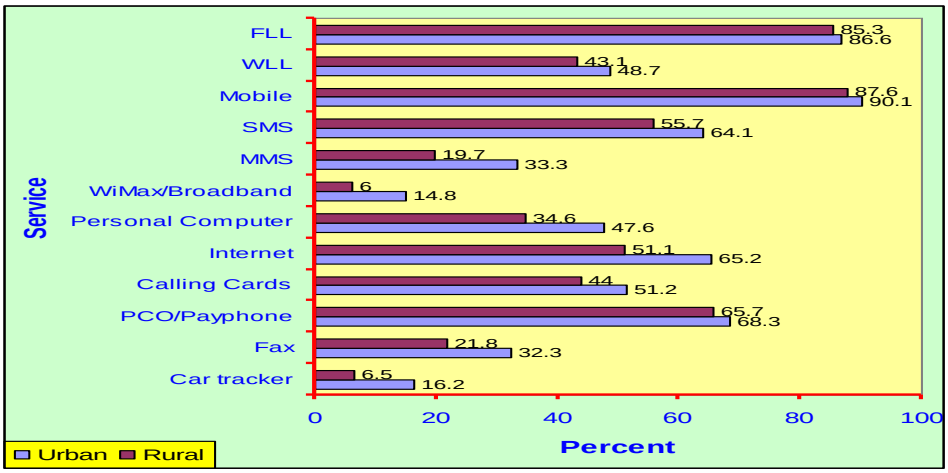
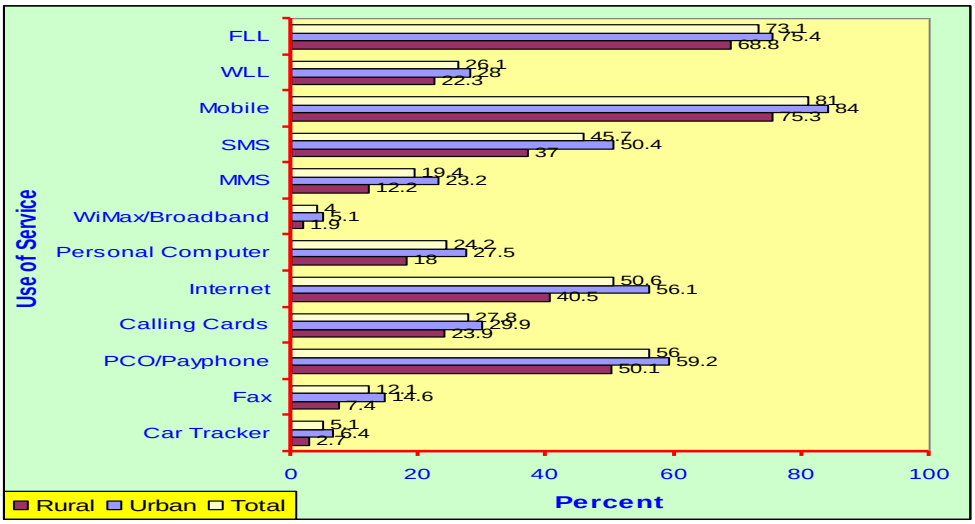


Figure-1.2
Knowledge about Telecommunication Services, Pakistan, 2008



The bar charts are based on the response of the respondents when they were asked if they made use of any or more of the twelve telecommunication services they knew about. Mobile phone is by far the most common service in use followed by FLL phone, PCO/Payphone, Internet, SMS and calling cards. The survey data also shows that new telecommunication services like WLL, Wimax/ Broadband, SMS, MMS and Vehicle tracking are being made use of by a section of the respondents. Figure-1.3 shows the use pattern of different telecommunication services.

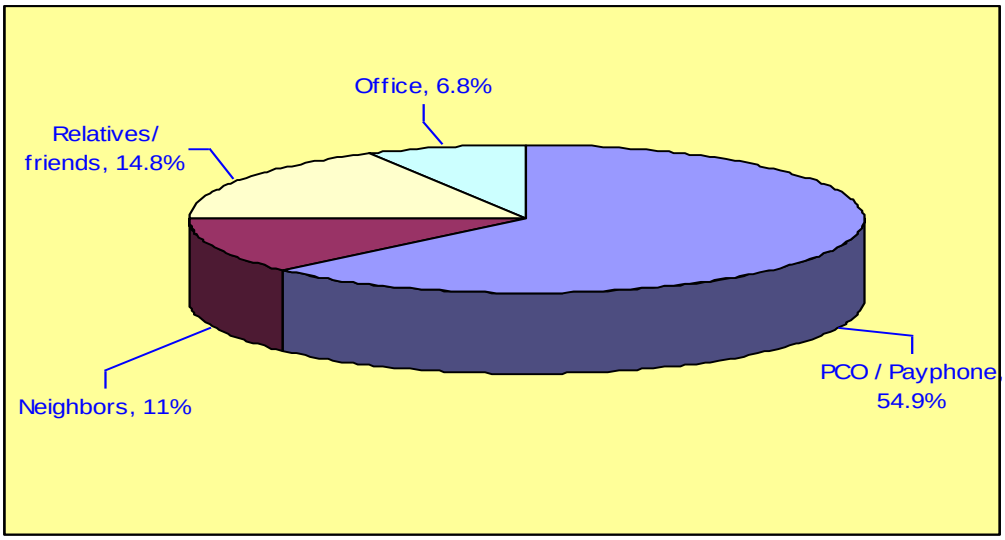
Figure-1.3
Use of Telecommunication Services, Pakistan, 2008



Source: TEACH Survey

It is observed that all services are in use by a significant proportion of people in urban as well as rural areas. It may be noted that Internet use has been reported by 56 percent in urban and 41 percent in rural areas. Percentage of respondents who use FLL phone, Mobile phone or Internet etc. is high even though they may not necessarily be owning these facilities. The phone users take advantage of a large chain of PCOs/Payphone operating in the country (449,121). People also avail the facilities of neighbours, friends or relatives. They also use such services in offices where they are working. In case of Internet and PC users avail facilities at different Netcafe / Telecentres (4500) run by the private sector. Figure-1.4 shows use of such places by respondents who do not own their own telecommunication facility.

Figure-1.4
Place where Phone facility Used, Pakistan, 2008

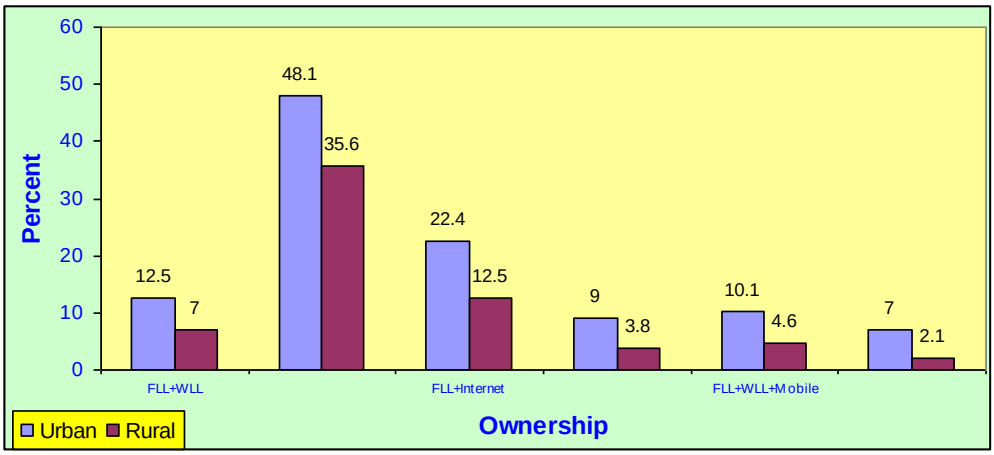


Source: TEACH Survey

1.2 Ownership Spectrum

The ownership of different services as indicated in the non-targeted survey of 10,000 respondents is shown in Figure-1.5. Many respondents reported to own more than one service. The dual ownership of fixed and mobile phone has been found most common followed by fixed phone and internet combination. Many respondents were found to own three services. In this category combination of fixed, mobile and internet is more frequent. An overall percentage of fourteen percent reported to own all four services. Ownership of multiple services is more in urban areas than in rural.

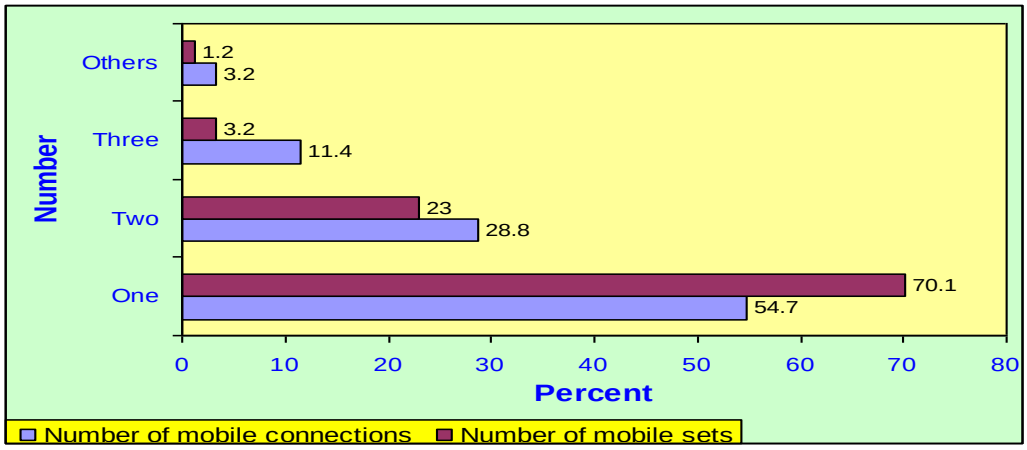
Figure-1.5
Ownership of more than one Telecommunication Service, Pakistan, 2008



Source-TEACH

From amongst the business respondents, data was collected about ownership of number of mobile phone connections and mobile phone handsets. The data reveal that about fifty percent of respondents own only one connection, while about thirty percent have two and around ten percent have three connections. Figure-1.6 shows the connections and handsets reported by the respondents.

Figure-1.6
Number of Mobile connections and handset, Pakistan, 2008

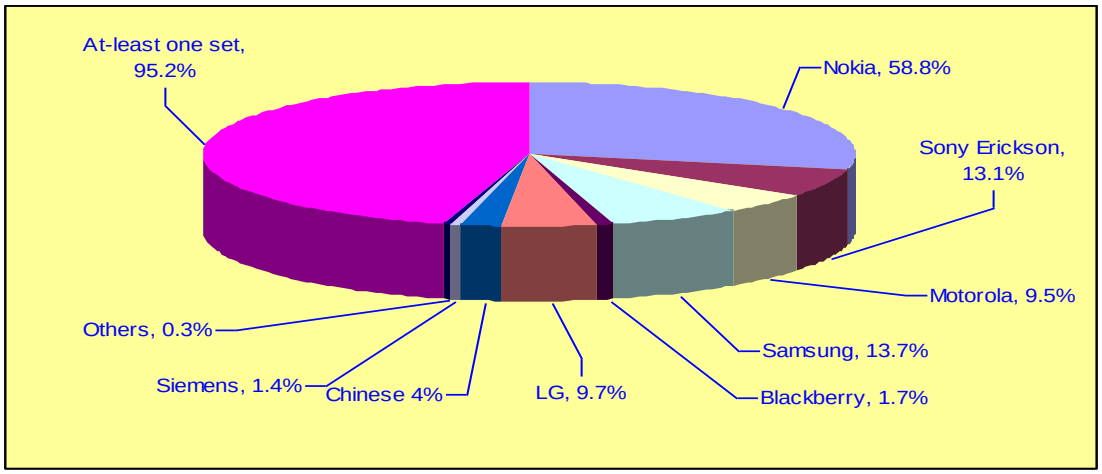


Source-TEACH

In case of handsets, seventy percent own one handset. About twenty percent have two and three percent report three or more handsets. A cursory look will show that some respondents have more handsets than number of connections while there are others who own more number of connections than handsets.

The most popular handset make is Nokia, next comes Sony Ericsson, Samsung, Motorola and LG etc. in that order. Figure-1.7 shows the mobile brands commonly used by the respondents.

Figure-1.7
Brand of Mobile used, Pakistan, 2008



Source-TEACH

The number of persons of a family owning mobile phone has also been reported. Thirty percent of households respondents reported one family member having phone, 45 percent respondents reported 2 to 3 members of family having it. More than 10 percent of households reported more than 3 family members having mobile phone.

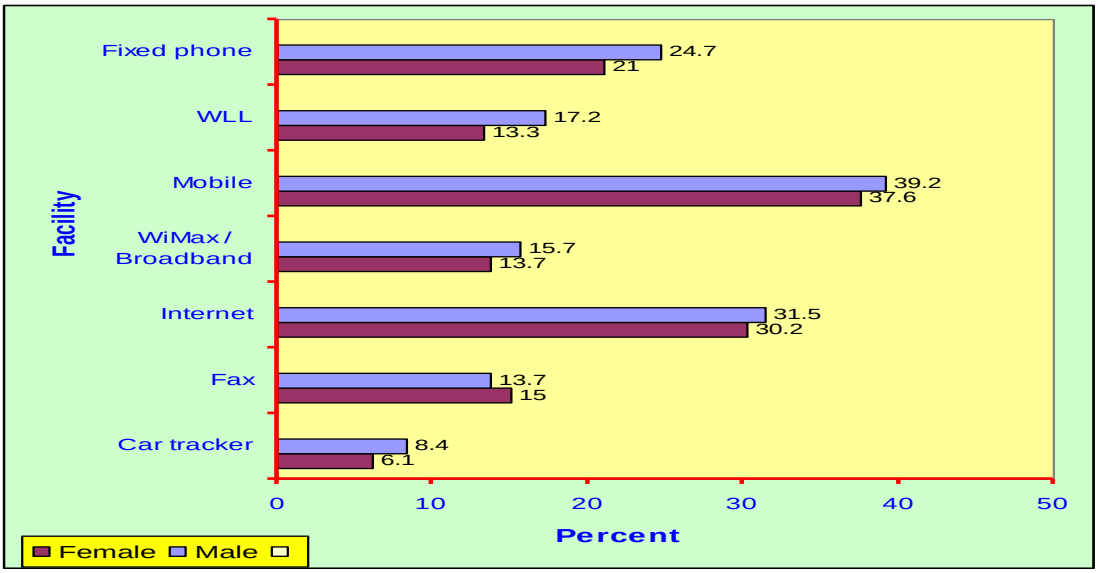
One female member of family having mobile phone is reported by 36 percent of household respondents and 2 to 3 female members of a family having mobile phone is indicated by 17 percent respondents.

In respect of three main services, i.e., Mobile, FLL and Internet respondents were asked to indicate reasons for not owning the three basic services. Four possible reasons were mentioned by respondents.

Nine percent of respondents were not owning the telecommunication facility as telecommunication service was not available in the area where they live or work. Despite expansion in the coverage, it is not available universally. The coverage of mobile telephony is estimated at about 75 percent. Other telecommunication services have much lower coverage. About sixteen percent of respondents reported non-affordability as a reason for not owning the telecommunication services. Three percent of respondents find no use for it. For another four percent respondents, telecommunication services are complicated

technologies for easy use. It is fair to surmise that a vast majority of the population is well positioned to own the telecommunication services. About the prospects of future ownership high proportion were indicated that they are fond of these main services i.e. mobile phone (39 percent), fixed phone (36 percent) and internet (29 percent). The Figure-1.8 shows service-wise future ownership.

Figure-1.8
Telecommunication facility would like to own in future, Pakistan, 2008



Source-TEACH

The distribution of future ownership follows nearly the pattern described earlier for the existing ownership. The preferences for different services are also similar. A sizeable percentage of respondents look forward to subscribe to future-oriented services like mobile phone, internet, PC, broadband services. Many also wish to own traditional services like FLL/WLL and Fax. The prospects of future demand for the telecommunication services seem to be robust. Vehicle tracking facility is tailored to enhance security against car theft. Its operation is linked to mobile networks coverage. More and more car owners are likely to use this service as and when the mobile network coverage is sufficient. Rural respondents show a bigger percentage hoping to own FLL/WLL, Mobile and PC than the urban respondents. However, a higher percentage of respondents in urban areas like to own internet, broadband, fax and vehicle tracking facility. Rural areas still suffer from low coverage of basic services like FLL, WLL and Mobile. Gender divide is found to be narrow as female respondents also want to own different telecommunication facilities. However, percentage of female wishing to own the telecommunication services is still lower than that of males.

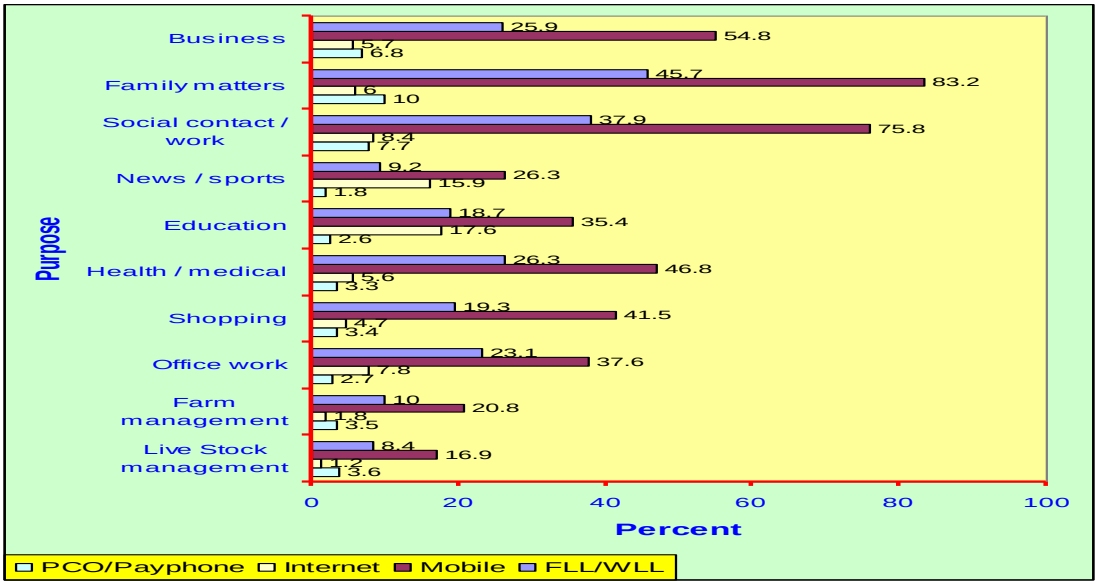
1.3 Purposes of use of telecommunication services

Purposes for which different telecommunication facilities are utilized is an important parameter to evaluate the impact of telecommunication sector on social and economic development. With this objective in view, respondents in the survey as from business were asked about the purposes of different telecommunication

services like FLL/WLL, Mobile, Internet and PCO/Payphone. Ten purposes of use were listed in the questionnaire. Respondents were asked to identify the purposes. The purposes listed are business, family matters, social contact and work, news and sports, education, health and medical, shopping, office work, farm management and live stock management. According to the household survey, fifty percent respondents reported to make calls through FLL/WLL phone for discussing family matters. Phone calls for the purpose of social contact were the next most important purpose. A much lower percentage of respondents reported to make use of telephone in connection with matters related to health / medical, business, office work, shopping and education. Only ten percent of respondents reported the use of phone for the purpose each of news / sports, farm and live stock management. The purpose of use of telecommunication services is shown in Figure-1.9.

Figure-1.9

Purposes of use of Telecommunication Services, Pakistan, 2008



Source-TEACH

The pattern of purposes of using mobile phone is found to be similar to the pattern of use of FLL/WLL. However a higher percentage of respondents reported using mobile phone relative to calls made through FLL/WLL.

The pattern of purposes of internet use is different than that of telephone. A smaller percentage of respondents reported use of internet. However, internet was used mainly for education, news / sports. A significant percentage of respondents reported making use of internet for promoting social contact and office work.

Female respondents indicated making larger use of FLL/WLL phone for family matters, social contact, education and health/medicals than the male respondents. In the case of mobile, females reported using it more for education than male respondents while male respondents reported using mobile for all other purposes.

Data in respect of business respondents show that a preponderant proportion reported using FLL/WLL phone for family matters followed by business and social contact. Next important uses were for office work, health/medical and shopping. A smaller percentage of business respondents indicated making use for education, farm and livestock management and News/sports.

Respondents reporting the purpose of mobile phone showed that above eighty percent of all respondents used the phones for family matters, social contact and business matters followed by a small percentage of respondents who termed the purpose of use as health / medical, shopping and office work. A smaller percentage of respondents reported the purpose as education. It is evident that respondents whether at work or at business use phones for discussing family matters and social contact. Respondents from business report higher use of telecommunication facilities for business, family matters, social contact/work, health/medical, shopping and office work than the respondent from household survey.

Data about purpose of use of telecommunication facility in respect of business respondents was also tested for association between different variables using Chi-square test. It is found that the FLL / WLL have significant association in all activities. The use of mobile phone shows association with all areas of activity except the farm management where, the association is found as not significant.

The use of internet also shows a significant association with all areas except the business and family matters.

In respect of purpose of use of PCO/Payphone, the analysis shows evidence of significant association with all activities except the business and family matters, where association is found as not significant. Data from household survey has also been analyzed. Highly significant association with the purposes of education / studies, news / sport; health / medicare and office work is found.

The use of mobile phone has high significant association in the case of family matters, social matters, business, education / studies and health / medicare.

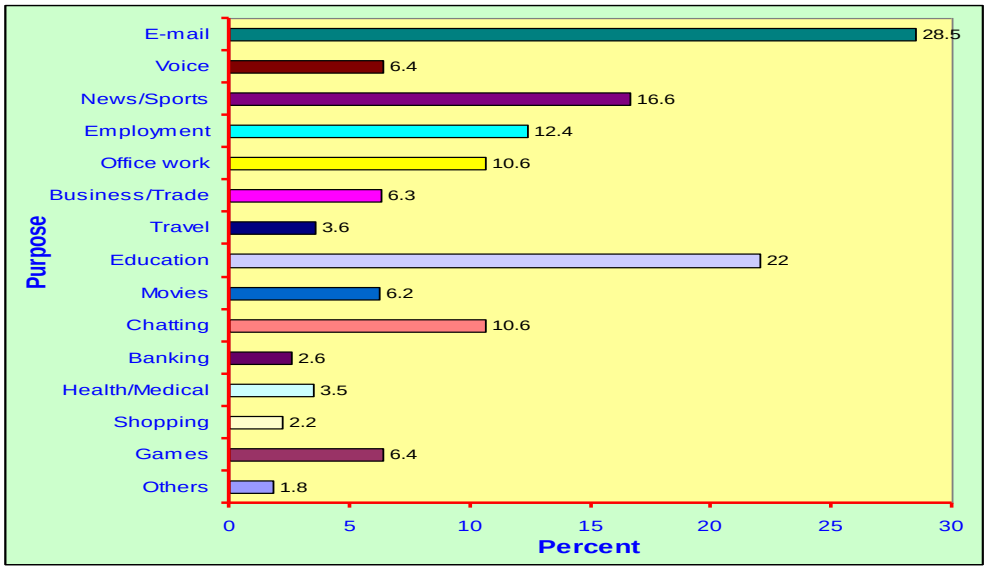
The use of internet has high significant association with news / sports, education / studies, and office work.

In the case of PCO/Payphone, association was found as not significant in family matters, social matters, education / study, heath / medicare and office work. The PCO/Payphone use was found to have highly significant association with farm and live stock management. It shows that PCO/Payphone is important in an agrarian environment.

Internet is a special service. It performs certain functions which are not available in other telecommunication services like e-mail, chatting and online

shopping, etc. Figure-1.10 shows use of internet for such and other routine purposes.

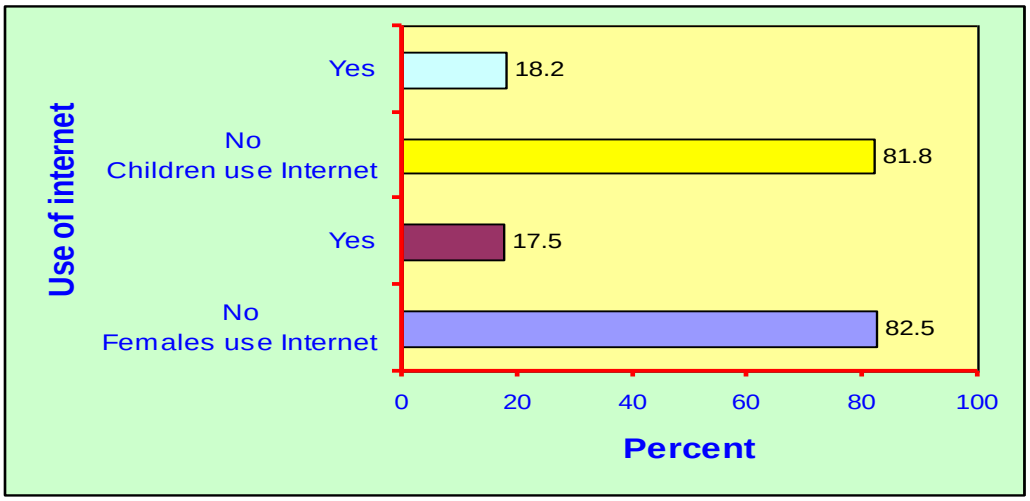
Figure-1.10
Additional purposes of using Internet, Pakistan, 2008



Source-TEACH

It is interesting to note that internet, a modern means of communication relative to the century old telephone, is also being used by females and younger age groups. Eighteen percent of children and 17.5 percent of females in household survey have reported use of internet, the use of internet by females and children is reported by a higher number of respondents in urban than rural areas. The purposes for which internet was reported are email, office work, business, trade, chatting and education. The ownership and use of internet is positively related with income.

Figure-1.11
Female and Children use Internet, Household, Pakistan, 2008



Source-TEACH

1.4 Purposes of use of SMS

The mobile handset has many additional features and facilities. MMS and SMS provide a new mode of communication. SMS use has been growing rapidly.

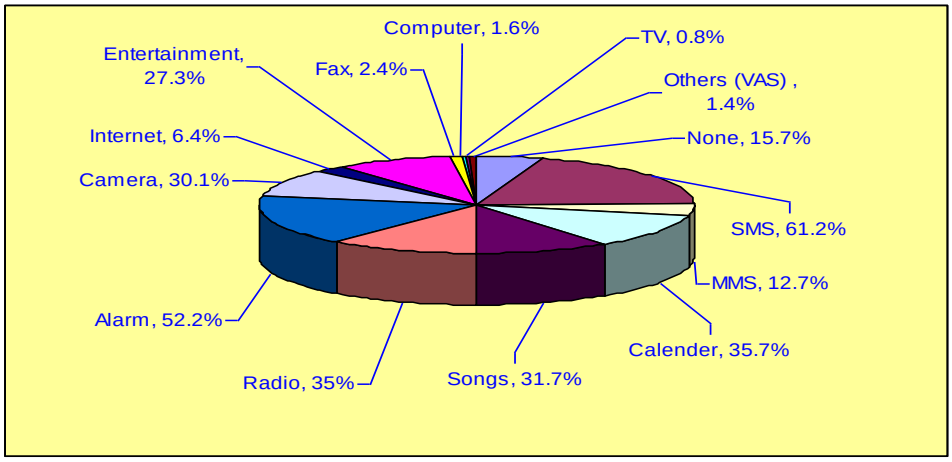
Business respondents were asked about the use of Mobile handset for purposes other than making calls. As many as twenty functions were listed in the questionnaire. Sixty percent of respondents reported making use of the SMS facility. About fifty percent had reported making use of function of alarm clock and calendar. A large percentage of respondents had used it to take photographs. Some had also utilized the function of a radio receiver. A sizable percentage of respondents make use of handset to listen to songs relayed by the Mobile operators and to play electronic games. Interest shown by respondents in songs was found to be intense.

According to respondents from household survey, more than half of the respondents described using SMS for personal matters. A somewhat smaller percentage of them reported it for family matters. Twenty percent of respondents reported use of SMS for purpose of business and education. Use of SMS by respondents in rural areas was less than their urban counter parts. Higher literacy rates in urban areas seem to have enabled urban respondents to send SMS messages as compared to their rural counter parts.

Figure-1.12 shows various extra features in the handsets. Service like SMS, MMS, song relay points to a new source of revenues for Mobile phone and WLL phone service providers.

Expensive handsets like Blackberry and i-Pod has also facility of Internet but only 27 percent of respondents have reported using their handsets for accessing Internet. A beginning appears to have been made in the use of Internet for banking, voice communication, travel booking, watching movies and spreading knowledge about job vacancies.

Figure-1.12
Use of Mobile other than Calls, Pakistan, 2008



Source-TEACH

1.5 Frequency of use

Frequency of use of telecommunication facilities in terms of number of calls made and received and number of SMS messages sent and received in a day is an important indicator of use being made by different types of businesses and households. Number of calls made by household respondents through Mobile phones averages out to be about ten while twelve calls are received per day by an average respondent. Average number of SMS sent by a household respondent came out to be about fourteen and number of messages received is sixteen per day. Rural respondents reported to make and receive larger number of calls from Mobile phones per day than their counterparts in urban areas. Gender differentials show male respondents making and receiving more Mobile phone calls than their female counterparts.

The use of FLL/WLL phone by the household respondents shows making five calls and receiving six daily on an average basis. Female respondents reported making and receiving on average higher number of calls than males. With the overwhelming increase in the number of Mobile phones use of FLL/WLL phones has been significantly reduced. Another factor is the cheaper rates through Mobile tariff packages. Data also show higher frequency of use of SMS facility.

It is safe to conclude that SMS use is overtaking the phone call making activity. The main reason for lower reliance on phone calls is saving in expenses. SMS is more popular with the younger groups in the population. This mode of communicating is akin to the older practice of letter writing.

On average number of SMS messages sent by the business respondents is twelve while messages received are fourteen. In the rural areas, the average number of calls made is lower than urban areas. Calls made through FLL/WLL in a day are 3.6 and calls received are 4.3.

In case of household respondents the frequency of use of Mobile phone is reported higher than that of FLL/WLL. The mean number of calls made is 10 and calls received is 12 per day through FLL/WLL. While Mobile phone users in rural respondents reported 8.6 calls made and 10.5 received on the average which is less than the calls made by urban subscribers who reported to make ten and receive twelve calls.

1.6 Male/Female differentials

In use of FLL/WLL, female respondents reported making 6 calls and receiving 7 calls per day which is more than the calls made or received by males. The calls made and received by females though the Mobile phone averaged 8 and 9 per day respectively which is less than the calls made and received by males. This shows that females make more use of FLL/WLL.

The number of calls made is related to the income of respondents. Through statistical analysis, it has been determined that number of calls made and received

has a pushing correlation with the family income meaning people with higher income make more calls generally. The statistical analysis shows a correlation to this effect as given in Table-1.1 below.

Table-1.1
Correlation with Family Income, Pakistan, 2008

	Number of Mobile connections	Number of Mobile sets	Number of SMS messages sent	Total Number of facilities
Pearson Correlation between monthly income and different characteristics	.132(**)	.173(**)	.087(**)	.111(**)
Sig. (2-tailed)	0	0	0.003	0
N	1171	1171	1171	1171

** Correlation is significant at the 0.01 level (2-tailed).

1.7 Future Ownership

Information on future demand for some of the telecommunication services has also been assessed. Respondent who can't afford a telecommunication service or have no use for it or find it too complicated represent a proportion of 23 percent for FLL/WLL phone, 14 percent for Mobile phone and 44 percent for Internet respectively. Apart from such categories, the remaining respondents who at present did not own a facility are considered eligible candidates for owning Telecommunication services in future. They form the basis of latent demand.

It may also be noted that higher proportion of respondents (24 percent) want to own FLL than WLL phone (16 percent) despite the fact that WLL phone handset have attractive features relative to the Mobile phones. This phenomenon is attributed largely to more familiarity with the fixed phone. Powering of WLL phone is also a relevant factor in this regard. It is also interesting to observe that 40 percent of respondents want to own FLL/WLL phone in future as compared with 39 percent of respondents who want to own Mobile phone. Forty six percent of respondents want to own Internet (31 percent) and broadband (15 percent) connections. These two sister services are expected to become more pertinent as means for commerce and trade in the coming days. There is a realization of their impeding importance among the public. The policy makers should ensure their increased availability. The demand forecast for different services have been calculated for next ten years and given in Chapter-7.

1.8 Reasons for not owning telecommunication services

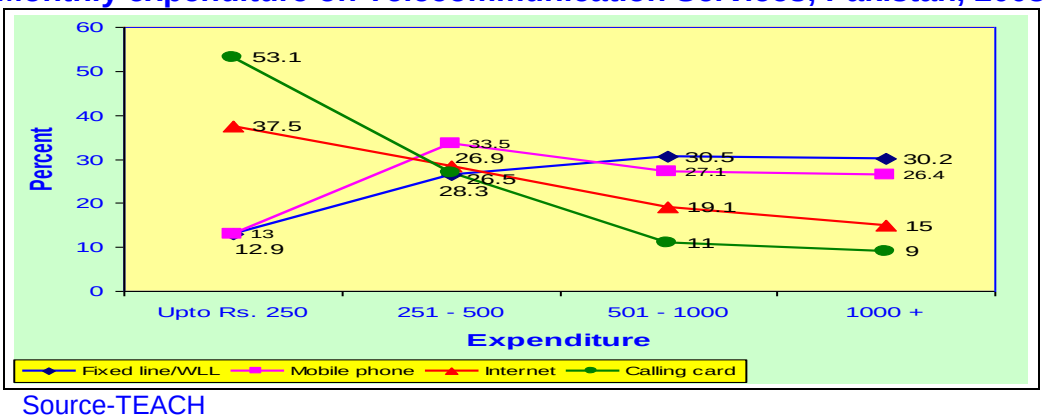
The result of survey regarding the ownership of internet and personal computer shows a discrepancy. On the face of it, if an individual does not own a PC how could he claim to own the facility of internet service. If 23 percent of respondents own Internet, then same proportion of individuals or a high proportion should also own a PC whereas survey results show a lesser proportion of individuals possessing a PC (19.4 percent). It was found that results from NWFP,

Sindh and Balochistan are in accordance with the expectation whereas in Punjab more people claim to have internet than the number of PC owners. This unexpected result was found to be due to confusion on the part of respondents in Punjab who confuse the use facility as owning the Internet facility. The persons who were exploiting the facility using Internet in Net cafe's and offices etc. had the perception of having ownership. Similarly in response to question about intention of having future ownership more respondents indicated to own Internet (31.2%) than PCs (22.4%). This anomaly appears also due to the misperception of respondents as indicated above. Another factor that is relevant in this regards is that Internet service providers have also started marketing Netcards. The introduction of these cards has done away with the necessity to open an account with an Internet company. Card holders can use internet as and when required using ordinary telephone or WLL line. Apparently, the Internet card users consider themselves as owners of the facility.

2.0 Pattern of expenditure on different telecommunication services

Figure-1.13 shows money spent on different telecommunication services by the business respondents. Thirteen percent of respondent in case of FLL/WLL made expenditure upto Rs.250/- per month. Fifty-six percent of respondents incur expenditure between Rs.251/- to Rs.1,000/- and thirty percent reported expenditure of more than Rs.1000/-. In case of Mobile phone, thirteen percent of respondents reported monthly expenditure of upto Rs.250/-, Sixty one percent reported expenditure in the range of Rs.251/- and Rs 500/- per month and twenty-six percent reported expenditure of more than Rs.1,000/- In case of Internet, thirty-seven percent of respondent reported expenditure of upto Rs.250/- per month while forty seven percent indicated their expenditure in the range of Rs. 251/- to Rs. 1000/- Only fifteen percent reported expenditure of more than 1000/- per month. On the purchase of calling cards fifty-three percent of respondents reported expenditure of upto Rs. 250/- per month. Thirty eight percent of respondent indicated expenditure of between Rs. 251/- and Rs. 1000/-. Nine percent of respondents reported expenditure of more than Rs.1000/- p.m. It may be noted the majority of respondents has expenditure of less than Rs. 1000 per month.

Figure-1.13
Monthly expenditure on Telecommunication Services, Pakistan, 2008



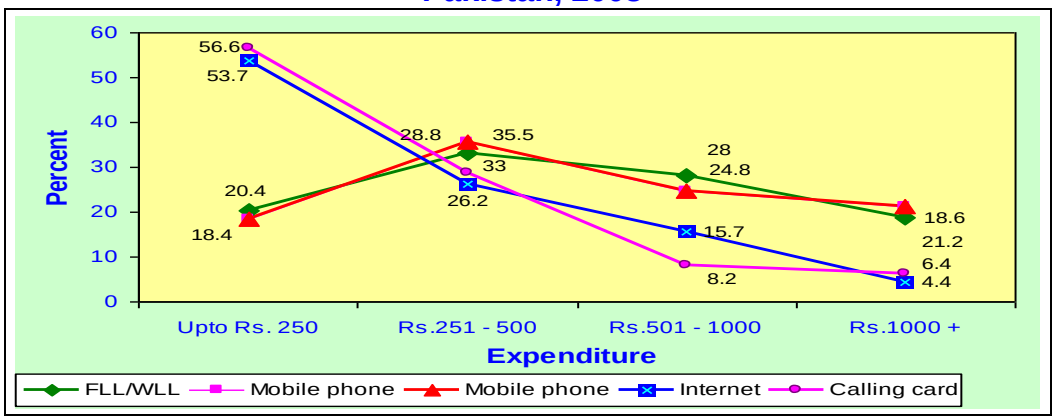
Source-TEACH

2.1 Expenditure incurred on telecommunication as per household survey

Figure-1.14 depicts the pattern of expenditure in respect of the four main telecommunication services. As far as expenditure of FLL/WLL is concerned, twenty percent of respondents fall in the expenditure range of upto Rs. 250/- per month. Sixty one percent fall in less than Rs.1000/- per month and nineteen percent make expenditure of above Rs. 1000/- per month.

In the case of Mobile phone, eighteen percent make expenditure of upto Rs.250/. Sixty percent have reported expenditure of upto Rs.1000/- and Twenty-one percent of respondents fall in the expenditure range of more than Rs. 1000 per month.

Figure-1.14
Monthly expenditure on Telecommunication Services per Month, Pakistan, 2008



Source-TEACH

In respect of Internet, fifty four percent of respondents had spent upto Rs 250/- per month while forty-two percent have spent in the range of Rs 251/- to Rs 1000 and only four percent had indicated expenditure of more than Rs 1000 per month. As far as expenditure on calling cards is concerned, it was found that fifty-seven percent of respondents have reported expenditure level of upto Rs 250, Thirty-seven percent have incurred expenditure of between Rs 251/- to Rs 1000/-. Only six percent of respondents had reported incurring expenditure of Rs 1000/- or more.

3.0 Socio Economic impact of telecommunication

Telecommunication facilities have assumed the status of essential needs in the modern life. These services may not be basic needs like food or water without which one cannot survive. However, the denial of telecommunication services creates a sense of isolation, insecurity and, for some individual's helplessness. Possessing a telecommunication gadget especially phone, has become part of attire. The gadgets are being used in various aspects of life, i.e. be it culture, social activity, human welfare, economic development or even politics. Almost the entire society i.e. males, females, students, young and old residing in urban or rural areas and engaged in diverse callings and professions make use of the telecommunication connectivity for local, distant and overseas contact round the

clock. Millions of Pakistanis live away from their families in far away places and overseas countries. Thousands of Pakistani students are enrolled for studies in universities all over the world. Use of telephone and internet provides them a means of keeping in touch with their dear ones. Cheap call rates enable them to be in contact with their families and friends without an undue burden on their budgets. The extended coverage of mobile network permits overseas Pakistanis to remain in touch with their families and children living in rural areas. Ease in making of calls has strengthened the family communication. The old proverb of “out of sight out of mind” is no longer realized. With a provision of camera in the mobile phones and use of Internet for transmitting of photographs has been a powerful means. A doctor working in USA calls his ageing mother living in a village in Punjab twice a day to enquire about her well being. A son was born to a young couple working in US. Photographs of the newly born baby were transmitted same day to the grand parents in Rawalpindi. It is natural to expect that overseas Pakistanis miss family functions like birthday parties, engagements ceremonies and weddings etc. The events are now being captured electronically and being transmitted to the family members living abroad. Cultural events are being shared regardless of the location where events are held. In many instances, match making is being arranged over telecommunication lines. Daily newspapers carry advertisement seeking proposals for marriages where contact address is either a phone number or e-mail. It is often found that songs are played at the ceremony over Mobile phones from far off places for the benefits of friends and relatives. Thirty five percent of respondents have indicated listening to songs by using their mobile phone. One of the cellular operators has added an option of listening to recitation of Holy Quran and qawalis on the mobile. Reservation of seats in cinemas and theatres is often made through the use of phone. Introduction of SMS has opened a new outlet for cultural expression. Eid Mubarak, Happy New Year and Birthday sentiments are expressed in shape of SMS messages. Sharing of jokes, poetry verses and quotes is a favourite use of mobile phone through SMS. Females especially are fervent user and talkers on telephones. The purposes of calls by females have been documented in the survey. The most common use made by females is exchanging information with friends regarding fashions in garments, listening to news about their friends and exchanging information on the shopping. Phone is often used for enquiries from the tailors about the status of stitching. They often place the order for purchase of mutton on phone. Home delivery of pizza is convenience. Shopkeepers as well as purchasers often consult their counterparts about the available choices and the price levels which avoids unnecessary trips. Use of Internet is gradually replacing catalogue shopping. Sources of supply for industrial purchases are often identified through Internet. Websites of business houses, multi-nationals and manufacturers provide the necessary information about products. SMEs have reported use of carrying out Internet for the business transactions. Purchase orders are placed through Internet and payments are made electronically using credit cards. E-commerce is increasing at a fast rate especially across the international borders replacing traditional and time consuming mail orders and conveying hard copies of letter of credit. The savings in time come handy the case of food shortages. Whenever

wheat or sugar is in shortage, government is able to procure commodities through e-commerce facility on a fast track basis and manage to avoid crisis. Improved means of communications have helped in meeting the goal of food security. The use of telecommunication facilities in emergencies is found to be beneficial. Police, fire brigades and ambulances can be called without loss of time. System of abbreviated and UAN numbers have facilitated quick response.

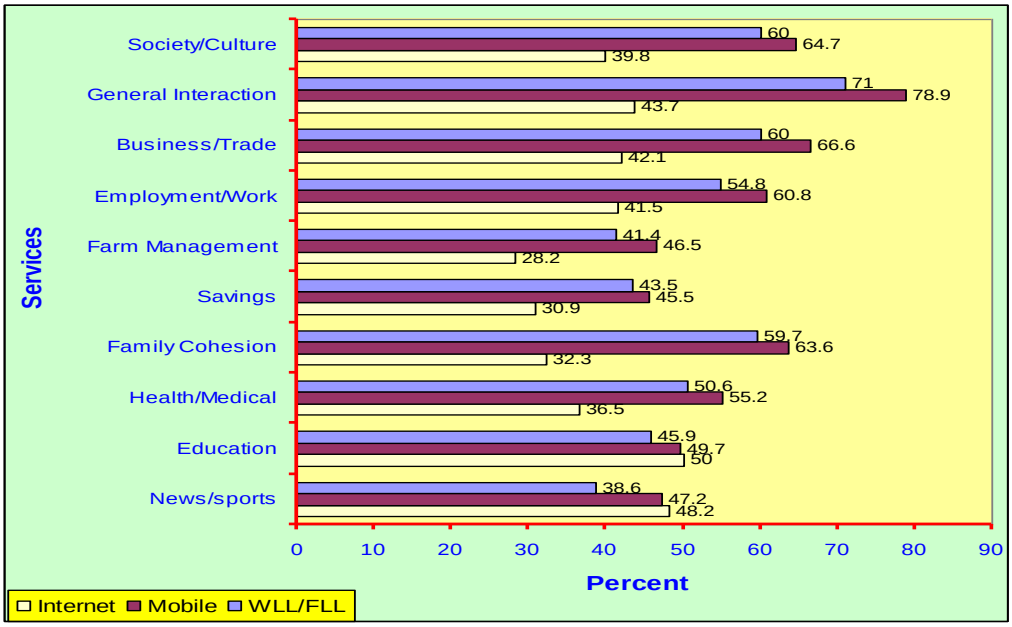
In case of disasters, rescue, relief and recovery operations reliable communication links are needed. Restoring telecommunication facilities is critical as it facilitates the speedy implications of all operations. The mobile telephones can be deployed in a short term. The students in the University of Engineering and Technology, Lahore have developed a system of broadcast through SMS. This alerts the mobile users about the impending natural disaster like cyclones etc. Same methodology can be used for early warning system about floods. There are immense possibilities of using mobile phone in running successful vaccination campaigns which can control epidemic related-disasters. Survey shows significant use of telecommunication service for addressing health and medical problems. The provision of telecommunication services also improves the delivery of health services. People can enquire about the condition of sick persons. The patients can consult their friends about the suitable doctors and / or hospital for proper treatment. The chain of Rural Health Centres (621) and Basic Health Units (4824) are not able to operate efficiently due to the shortage of doctors, paramedics and medicines. Modern telecommunication links provide means to improve the working of the health facilities in rural areas, as it facilitates consultation with specialists and expedite transportation of patients to main hospitals. Introduction of telemedicine has revolutionized the medicare system in remote areas by improving the outcomes of health delivery systems.

New telecommunication gadgets have also created a hope for disabled persons and children. Mobile phone is a boon for those who can't walk or see. Internet terminals with Braille key boards and a speaking computer enables them to educate themselves and seek knowledge. People involved in social work take benefits out of mobility as they move from one area of operations to other. A local NGO used mobile phone network to appeal for donation for its hospital by sending SMS to thousands of users and achieved fruitful results.

Use of telecommunication services, especially internet, is becoming popular in connection with education and research studies. It facilitates communication of parents with teachers. Students consult each other in connection with home work and preparation for examination. Accessing e-libraries internet users can benefit a lot. Higher Education Commission (HEC) in Pakistan has set up an e-library. It has many books and journals as e-products. For researchers, there are many useful technical reports on the Internet. In rural schools, teacher attendance can be easily regulated for the benefits of students. Distance learning has also come of age in Pakistan. Virtual University, Lahore has enrolled students who study through broadband connections.

Efficient and increased access to telephone is necessary for smooth conduct of business, trade and industry. Both the supply and demand side of business are favourably impacted. The diversity in sources of supply enables access to cheaper inputs. On the demand side, the customer base is enlarged. Market price information is updated regularly through the use of external communication. SMEs have achieved better financial results and have increased their turn over and sales by using telemarketing. Advertisements on websites are now considered essential to increase the sales. Improved internal communication in large organizations made possible by telecommunication services has led to improvements in productivity and efficiency. The description about the proper use of telecommunication services will not be complete without mentioning their reported use in matters concerning employment. Mobile phone use is popular with skilled and unskilled workers. The case of the plumbers, electricians, carpenters is instructive to analyze the benefits of Mobile phones. They have been able to increase the volume of their business as use of phone has enabled them to hop from one assignment to another without waste of time. Similarly, semi-skilled domestic and sanitary workers etc. have been using mobile phone to improve their productivity resulting in increases incomes. Figure-1.15 shows perception of respondents in the non-targeted survey about the benefits of telecommunication services in 10 different activities.

Figure-1.15
Benefits of Telecommunication Services, Pakistan, 2008

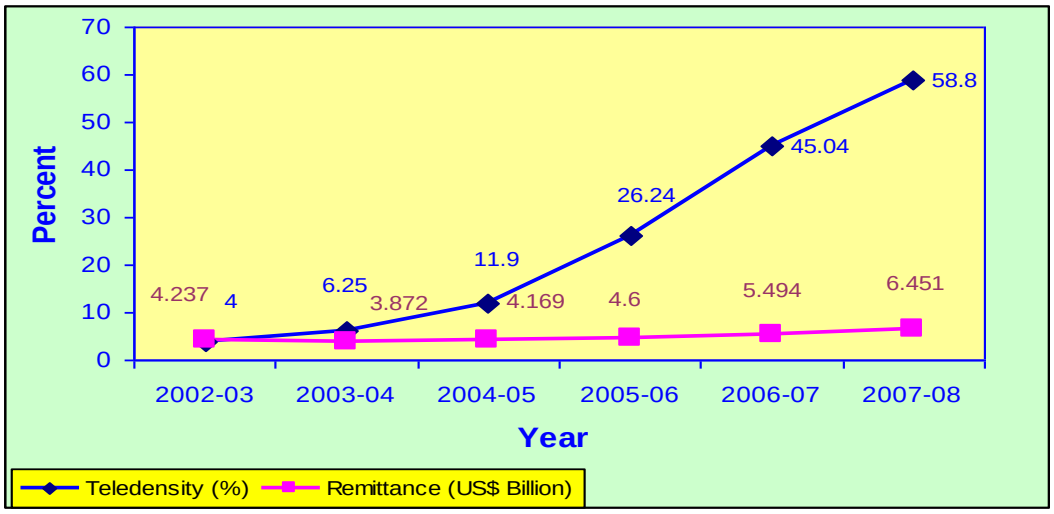


Source-TEACH

At the macro level, the benefits from development of telecommunication infrastructure have been enormous in line with international evidence that shows 1 percent increase in penetration leads to 0.03 percent increase in GDP. Pakistan must have experienced acceleration in the rate of increase in its GDP as penetration in Pakistan has increased by 3 percent to 50 percent.

In recent years remittances from overseas have been on the increase. This can partly be attributed to the availability of faster telecommunication service which has enabled setting up of computer based international networks like SWIFT. The ease of phone contact with the recipient of remittances has also played a role in this process. This has had a healthy impact on the economy to finances worsening of balance of payments. Figure-1.16 shows the teledensity & remittance trend for the last five years.

Figure-1.16
Teledensity and Remittance Trend, Pakistan, 2008



Source-Teach

About twenty-five percent of Pakistan economy is based on agriculture. Telecommunication has also helped the agriculturists. The farmers are able to collect timely market information from the city markets. This helps to negotiate better prices of their produce in the primary markets. In the management of farms, a phone is a handy facility to procure supplies like seeds, fertilizers, and pesticides, etc. Utility organizations like PEPCO and irrigation authorities can be approached easily in connection with electricity supply and water supply problems. Livestock farm owners can have quick access to veterinary doctors in the event of animal health problem. Respondents in the survey have reported huge benefits of telecommunication in these areas.

3.1 Socio Economic Impact Assessment

In the business survey the assessment of respondents was sought about impact of three main telecommunication services on four social aspects of life namely broadening of social circle, family cohesion, access to doctor / health facility and help in knowledge / education. Also their opinion was solicited about impact made by use of telecommunication in nine business oriented activities namely help in solving day to day problems, search of work / livelihood, increase in efficiency, finding new customers, increased sales and turnover, increase in income, market/price information on new products, interaction with utility department, ease of remittance, reduction in transaction time of deals, crop

management and live stock management. They were required to indicate degree of impact in terms of no impact, some what impact and very much impact. Figure-1.17 shows the results in respect of four social activities, which depicts results about business oriented activities.

As part of statistical analysis Chi-square test was applied to data about impact assessment to determine level of association between the particular service and activity.

In case of business respondents, the statistical test shows that use of FLL / WLL phone has significant level of association in all areas of activity except in increase in efficiency at work, instant price information and providing information on new products where association is found not to be significant. In the use of mobile phone the association was found significant in all 15 areas of activity. It means that respondents consider use of mobile beneficial in all activities. Similarly, in respect of internet use and its impact show significant association with reduced travel, increase in efficiency at work, increase in sales and turn over, information on new product and live stock management. In other ten areas, the association was found not to be significant.

Box-1.1
Study results in Africa on increase in return and efficiency by use of telecommunication services

In a study in Africa, 66 percent of respondents in Egypt and 56 percent in South Africa also reported increase in turn over, in use of Mobile phone. Efficiency is indicated by 56 percent in Egypt and 21 percent in South Africa in the same study.

In the household survey assessment by respondent was solicited impact of telecommunication service for ten aspects of life viz. broadening of social relationship, improved family relationship, easier access to health/medical facility, use for education, helpful in solving day to day problem, improved interaction with civil authorities, quick help in emergencies, increased awareness in employment/work, increased saving and increased income has been made. The Figure-1.18 shows the impact of telecommunication services on different benefits.

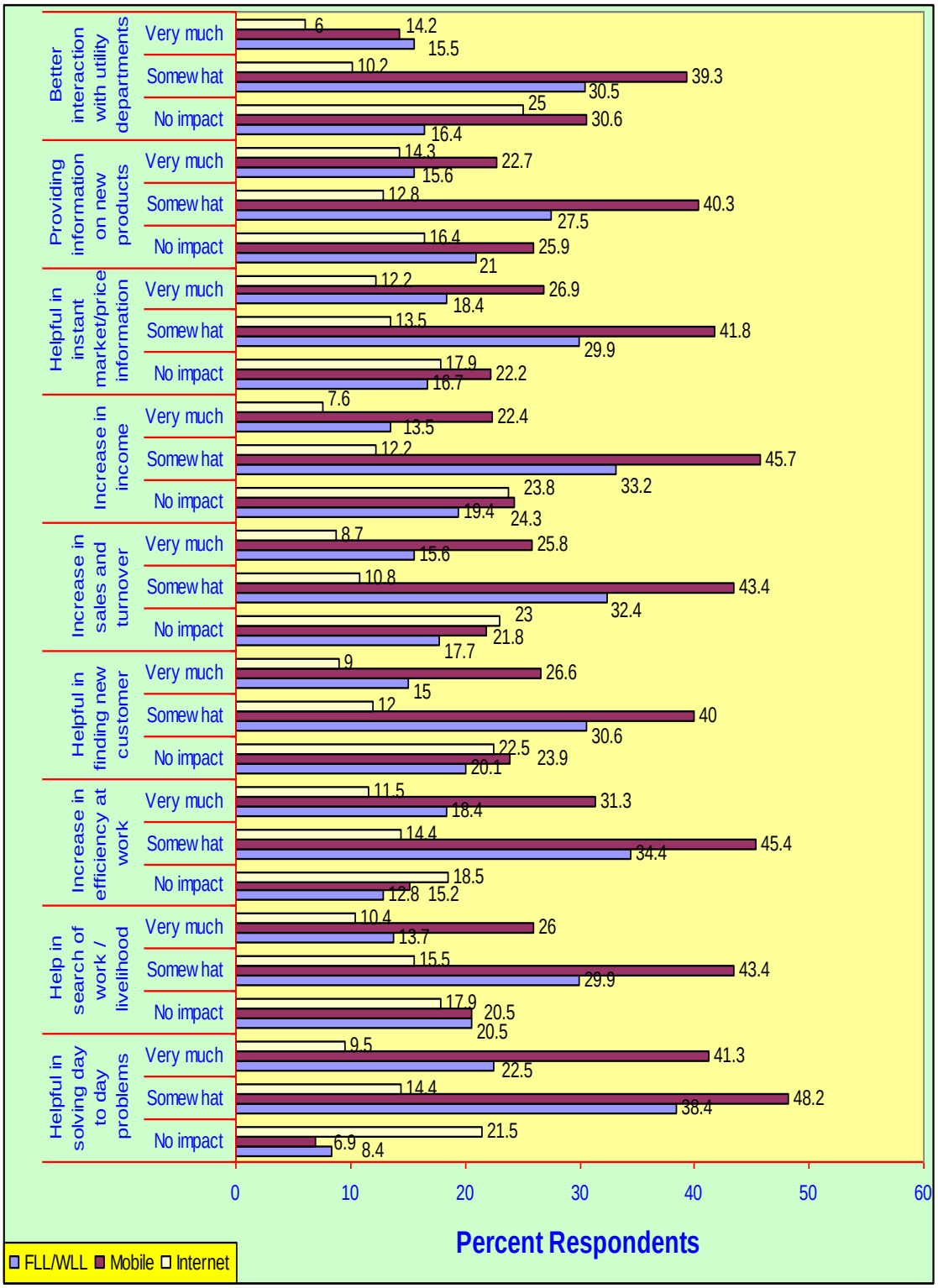
Box-1.2
Study results in India and Africa on influence of Mobile phone

In a study in India 52 percent report large influence of Mobile phone on quick help in emergency. In Egypt and South Africa only 10 percent and 20 percent reported Mobile phone to assist in emergencies.

Box-1.3
Study results in Africa on saving and efficiency by using Mobile phone

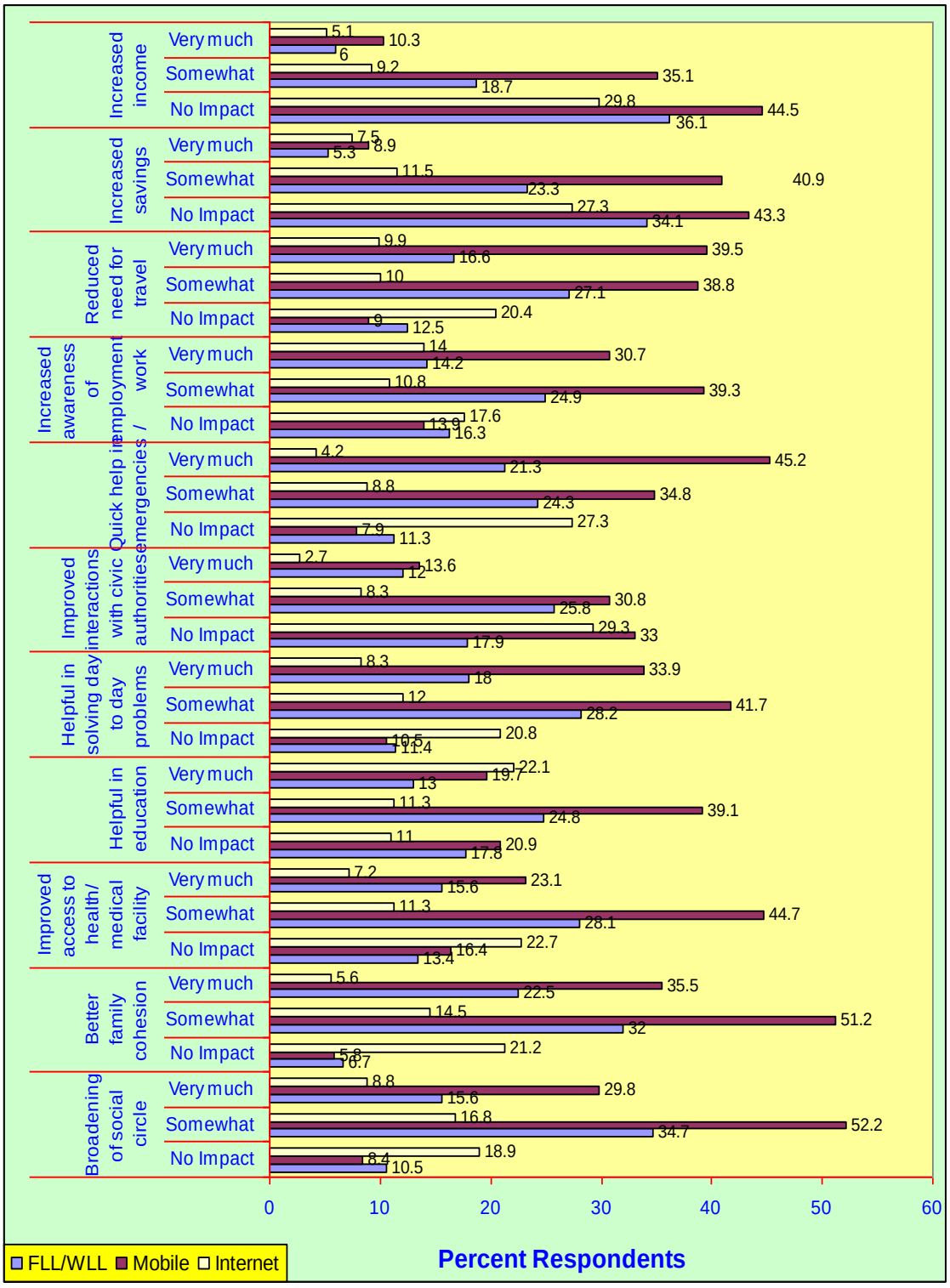
In a study in Africa about Mobile phone use 22 percent reported saving cost in Egypt and 16 percent reported savings in South Africa. Increase in efficiency was reported by 56 percent in Egypt and 21 percent in South Africa.

Figure-1.17
Socio-Economic Impact of Telecommunication services (Business), Pakistan, 2008



Source-TEACH

Figure-1.18
Socio-Economic Impact of Telecommunication services (Household), Pakistan, 2008



Source-TEACH

Statistical test was also applied to household survey data. In use of FLL /WLL phone, association was found significant with increased income, increased savings, usefulness for education, quick help in emergency and increased awareness of employment / work. Association was found not to be significant with broadening of social relationship, improved family relationship, helpful in solving day to day problems and improved interaction with civic authorities. In the case of mobile phone use, association was observed significant with increased income, increased savings, improved inter action with civic authorities, easier access to health /medicare and useful for education. The association with increased income and increased saving is highly significant.

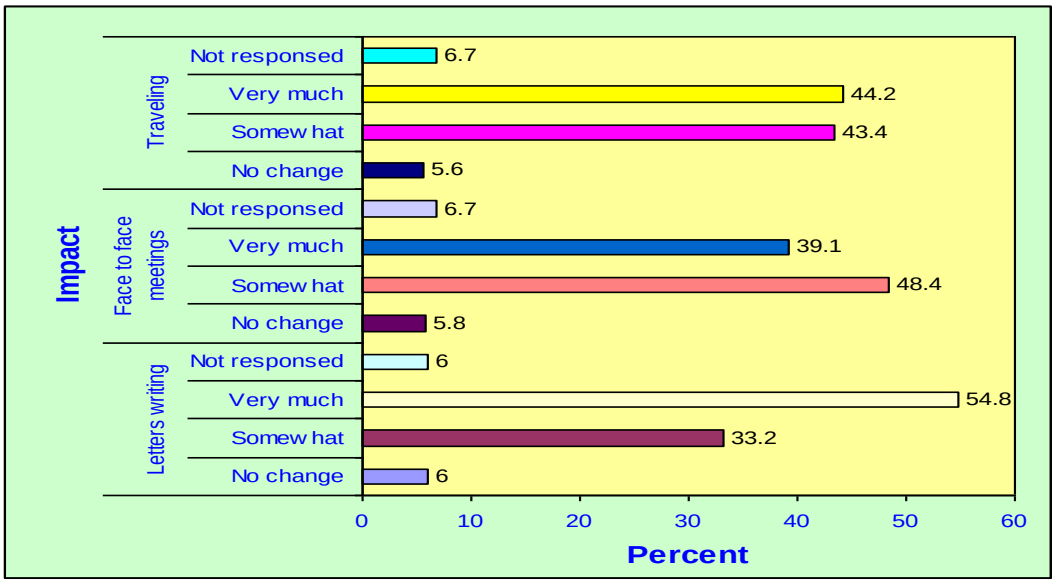
Box-1.4
Study results in India on influence on new products and price information of telecommunication services

In the study in India comparable respondents data about information on new products shows 17 percent indicating small to large influence of use of Mobile phones. 21 percent reported small to large influence on finding new clients. 20 percent indicated small to large influence on better market price information.

Regarding the impact of internet service, the association is significant with the benefits listed above, except for improved family relationship and easier access to health / medicare facility where association is found not to be significant.

Impact of each telecommunication service on every day activity like letter writing, face to face meetings and travel was assessed using data from business survey. Figure-1.19 shows the percentage of respondents indicating degree of impact.

Figure-1.19
Impact of Mobile phone on Letter Writing, Meetings and Travel, Pakistan, 2008



Source-TEACH

Box-1.5
Study results in India on reduction of letter writing and face to face Meeting of telecommunication services

In a study in Gujrat (India) 89.9 percent respondents reported large reduction in letters and 49 percent reported large reduction in face to face meetings.

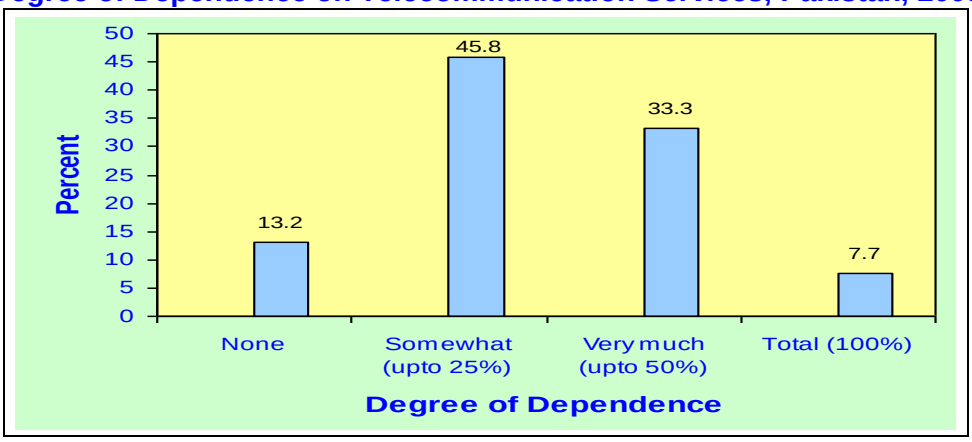
Reduction in writing of letters, face to face meetings and travel from use of FLL/WLL phone were reported at twenty-five percent, twenty two percent and twenty percent respectively. Comparative percentages for the use of mobile phone are fifty-five, forty and forty-four percent respectively. Mobile phone is considered more beneficial than FLL/WLL. Saving in time, money, transportation and energy have been seen to be occurred from the use of telecommunication services. In today's energy crisis, telecommunication services can play a crucial role as they provide an efficient alternative to the travel and commuting. New services like video conferencing can also have even a greater impact in this regard. In case of internet use response was very small and the impact is much lower. It may be surmised that perceptions about benefits from use of internet are not yet clear.

Money transfer is a frequent activity engaged in equally by household and business. Opinion was sought from respondents about the utility of three telecommunication services. In case of FLL/WLL phone use, forty two percent of respondents indicated it as beneficial from somewhat to lot. The comparative figures about the mobile phone use are more than sixty percent.

In case of internet, perception is again different, as 24 percent of respondents indicated no impact while twenty percent of respondents reported it to be beneficial from somewhat to a lot.

Telecommunication services offer faster communication than other alternatives means. When asked about reduction in the transaction time of deals from business respondents, fifty six percent indicated somewhat to lot of impact of FLL/WLL phone use. Percentage of respondents for mobile phone is eighty-four percent depicting a strong relationship with reduction in transaction time. In use of Internet for the same purpose, the percentage is about twenty five percent.

Figure-1.20
Degree of Dependence on Telecommunication Services, Pakistan, 2008

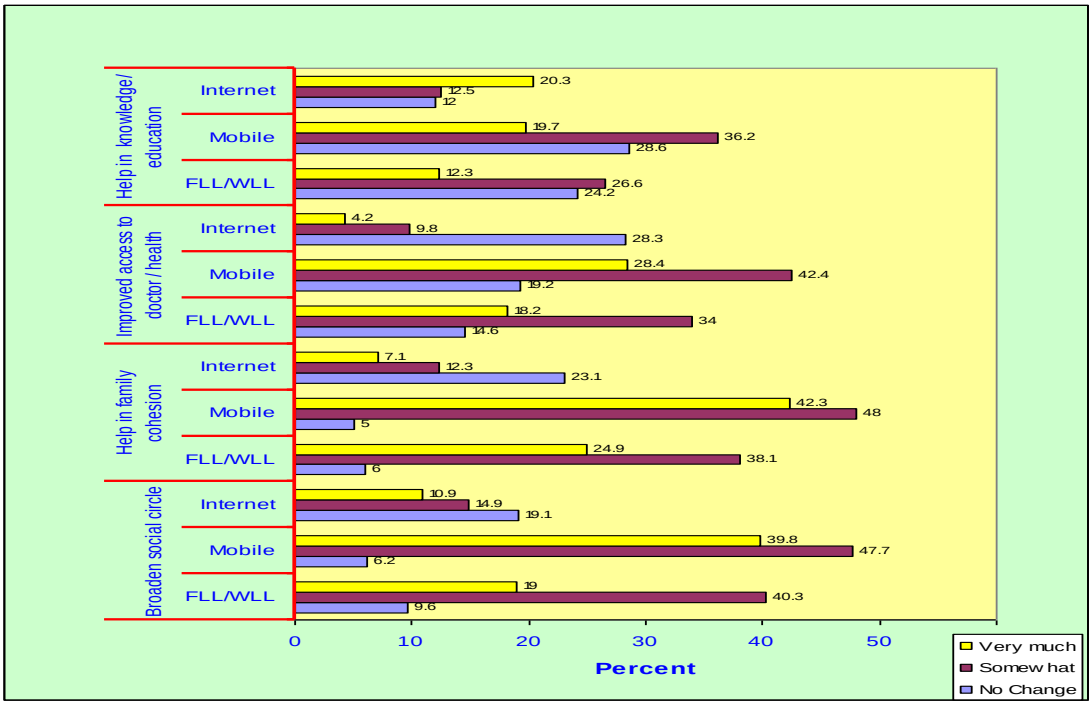


Source-TEACH

Box-1.6
Study results of dependence on telecommunication services

Business respondents were asked a key question about role of telecommunication in the business organization and degree of their dependence on telecommunication. Nearly half of respondents reported that dependence on telecommunication upto 25 percent. More than one third of respondents replied that it depends upto fifty percent. Eight percent termed the organization to be totally dependent on telecommunication. It is a significant finding that highlights the importance of telecommunication in running of businesses. Even respondents in rural areas understand the role of telecommunication as about half of the respondents reported the dependence to be 25 percent, another one third reported it to be 50 percent while one in twenty said organization was totally dependent on telecommunication. In the case of businesses located in rural areas which are distant from urban centres by definition, the existence of telecommunication services necessity of telecommunication assumes a more important role. Figure-1.16 shows the dependence of telecommunication services.

Figure-1.21
Impact of Telecommunication Services on different aspects of life (Business), Pakistan, 2008



Regarding the impact of Internet service, the association is significant with the benefits listed above, except for improved family relationship and easier access to health / medicare facility where association is found not to be significant.

4.0 Negative Impact

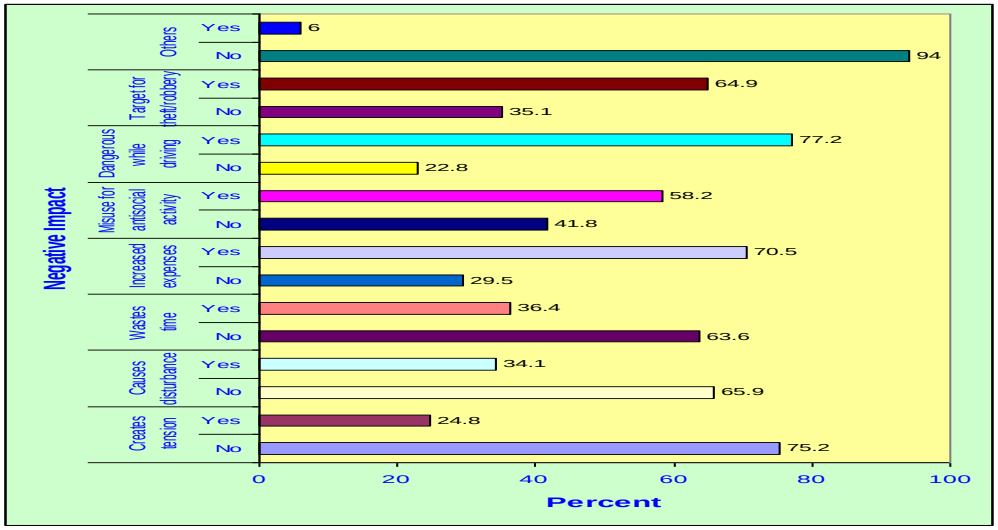
In the household survey respondents were also asked if they subscribed to the view that Telecommunication facility had a negative impact in some areas. Ten anticipated areas of problems like creating tension, causing disturbance in work, wasting time, increasing expenses, and misuse for anti-social activities, dangerous

while driving and being a target for theft / robbery were mentioned in the questionnaire. The Figure-1.20 shows the percentage of respondents who reported one or the other negative impact. According to collected data 36 percent of respondents reported that use of FLL/WLL phone causes increase in expenses. Fourteen percent indicated that it wastes time while 12 percent said that it was a cause of disturbance in work. Negative impact indicated in the use of mobile is more pronounced as may be seen in Figure-1.22. In the respondents' perception it is indicated that it was dangerous while driving (77 percent), it increased expenses (70 percent), it was target for theft / robbery (65 percent); it was misused for anti-social activities (58 percent). According to 36 percent of respondents, it causes waste of time, 34 percent thought it was a cause of disturbance in work and another 25 percent indicated that it created tension. This is an interesting finding. On one side more and more people want to buy mobile phone connection while on the other hand perception of many respondents is that there is a negative fallout of mobile phone use. Urgent measures need to be evolved for controlling the means of misuse of Mobile phone for anti-social activities. The importers should create awareness about hand free mobile handset for use while driving cars. Appropriate educational program about trouble free use of Mobile phone are needed to correct the adverse impression.

According to collected data 36 percent of respondents reported that use of FLL/WLL phone causes increase in expenses. Fourteen percent indicated that it wastes time while 12 percent said that it was a cause of disturbance in work. Negative impact indicated in the use of mobile is more pronounced as may be seen in Figure-1.22. In the respondents' perception it is indicated that it was dangerous while driving (77 percent), it increased expenses (70 percent), it was target for theft / robbery (65 percent); it was misused for anti-social activities (58 percent). According to 36 percent of respondents, it causes waste of time, 34 percent thought it was a cause of disturbance in work and another 25 percent indicated that it created tension. This is an interesting finding. On one side more and more people want to buy mobile phone connection while on the other hand perception of many respondents is that there is a negative fallout of Mobile phone use. Urgent measures need to be evolved for controlling the means of misuse of mobile phone for anti-social activities. The importers should create awareness about hand free mobiles handset for use while driving cars. Appropriate educational program about trouble free use of mobile phone are needed to correct the adverse impression.

In respect of Internet use, the perception about the negative impact is not shared by the majority of respondents. Only twenty-two percent (22 percent) respondents indicated that it increases expenses while 21 percent thought it wastes time. Small percentage of respondents pointed to other problems.

Figure-1.22
Negative Impact of Mobile Phone, Pakistan, 2008

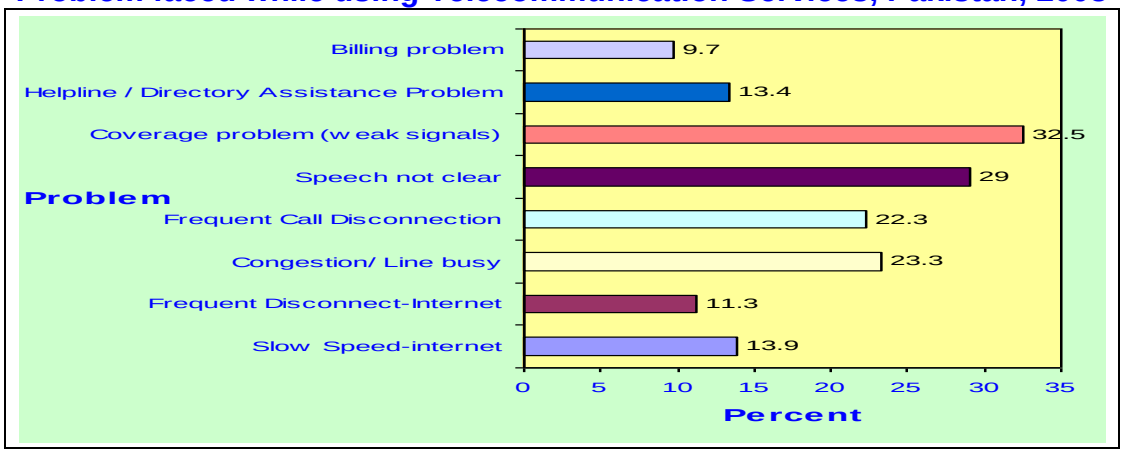


Source-TEACH

5.0 Problems Faced

Respondents were also asked to identify problems faced by them while using Telecommunication services. The objective was to ascertain their perception about performance of these services. Fifty-seven percent (57 percent) of respondents indicated facing one problem or the other as shown in Figure-1.23. Main problems which respondents indicated are coverage problems (weak signals of mobile phone service), clarity of speech, frequent call disconnection and congestion/line busy. All these factors point to problems in service provision. Clearly there is need to expand the coverage of service and ensure an improvement of quality of service. The response relating to negative impact and problems indicated by household survey shows maturity of awareness among the users. Opinion sounding by operators from time to time can provide them feedback on the basis of which they can reduce public grievances on one hand and build a competitive edge on the other hand.

Figure-1.23
Problem faced while using Telecommunication Services, Pakistan, 2008



Source-TEACH

Box-1.7
Study results of Africa facing problems of Telecommunication services, Pakistan, 2008

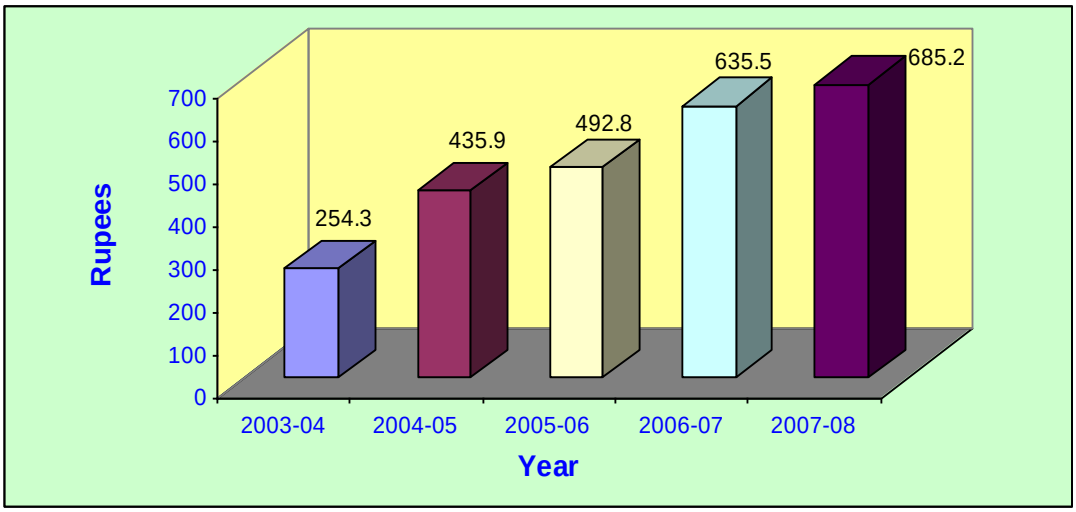
In a study in African countries, 11.3 percent respondents reported problem of poor network in Egypt and 4 percent indicated same problem in South Africa.

6.0 Conclusion

Telecommunication infrastructure yields benefits in tangible as well as intangible form. Large revenues are generated by the telecommunication industry. Telecommunication operation contributes to national exchequer in shape of duty, taxes, and other levies. Figure-1.24 shows the increasing trend in Government receipts from telecommunication industry. Telecommunication services generated consumer surplus of Rs.57838 (Billion) is estimated in the year 2007-08. Job creation and increased business avenues for low income people are also on the increase. Telecommunication industry has stimulated the IT industry facilities like Call centres, software houses and design offices have been set up. These facilities had increased export of improved telecommunication links. During the previous year telecommunication sector has contributed 1.9% to the GDP of Pakistan.

An estimate suggests that one percent income in telecommunication penetration might be expected to have 0.03 percent increase in GDP.

Figure-1.24
Contribution to national exchequer per capita (rupees), Pakistan, 2008



Source-TEACH

Increased telecommunication penetration has made impact on all type of businesses i.e. small, medium or large. It has also opened new avenues of industrialization at isolated places and in remote areas spreading the dividends of industrialization to such places. Cement factory established near Kalar Kahar have good communication links which have helped their operation. The negative sense of remoteness in this region has been eliminated.

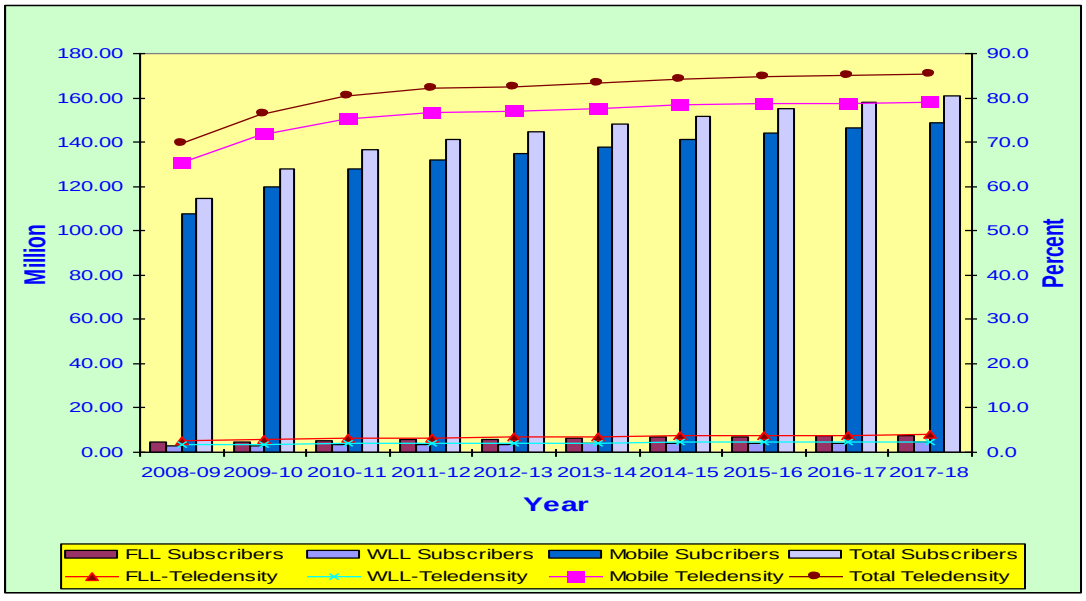
The telecommunication services have offered many advantages to SMEs namely:

i. Obtaining and using knowledge and information and developing competitive advantage and changing uncertainty to predictability and improve decision making.
ii. Improving internal and external communication at low cost facilitating negotiation and transactions and reduce cost of initiating negotiation and enforcing contracts.
iii. Improving responsiveness and efficiency
iv. Improving flexibility and adopt to changing environments and diversifying trading partners and expanding and diversifying customers.
v. Improved productivity
vi. Recent studies report casual relationship between ICT investment and productivity. However result confirms a positive correlation between ICT access and improved SME performance.

Similarly female population in Pakistan have benefited from increased access to telecommunication. Telecommunication has also played a role in poverty alleviation.

The survey data of respondents in Non-targeted and Targeted for Household and Business survey indicated that demand for different telecommunication services continues to exist despite increased penetration. Econometric model also confirms the existence of large unmet demand. Using regression techniques and statistic of last years, forecast has been prepared. Figure-1.25 shows the expected demand in the number of subscribers in next ten years.

Figure-1.25
Teledensity Projections, Pakistan, 2008/9-2017/18



Large investment is needed on an annual basis to meet the demand. The main drivers for telecommunication industry include status of economy, political stability, regulatory regime etc. A detailed discussion on how to optimize different drivers of telecommunication industry shows that there is a large scope for expansion in the telecommunication sector. The world telecommunication revenue is 4.9 percent of world GDP. Ratio of Pakistan telecommunication revenue to GDP should at least attain same level which means telecommunication growth rate will have to be at a higher rate than the growth of GDP.

Chapter-2

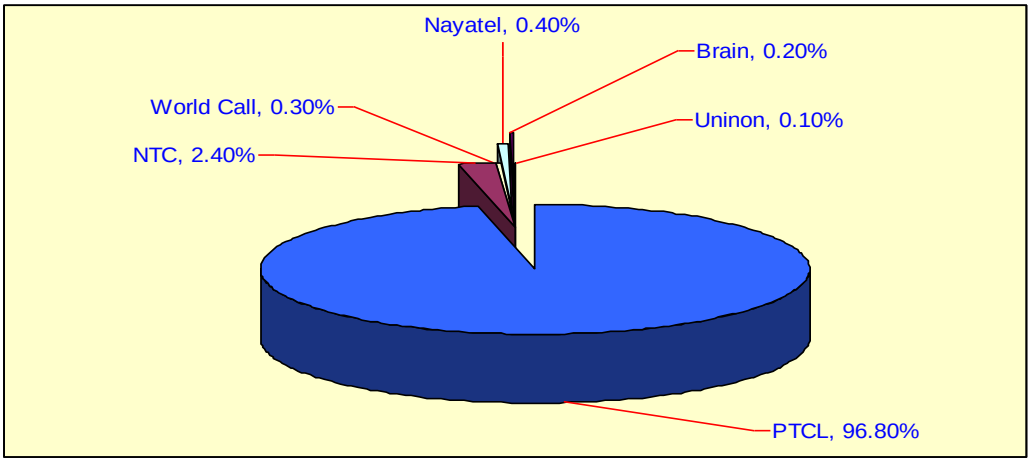
History of Important Telecommunication Developments

2.1 Introduction

The history of important telecommunication developments in Pakistan has been documented in many publications (PTA Reports). Only a brief account is presented in this chapter to highlight important milestones in policy development with a focus on deregulation, liberalization and privatization of telecommunication services in the country.

The telecommunication policy announced in 2004 was aimed at deregulating the telecommunication sector. Licenses for Wireless Local Loop (WLL) and Fixed Local Loop (FLL) were issued to a large number of licensees. Currently a large number of private companies are providing FLL and WLL services. The major player in this field is Pakistan Telecommunication Company Limited (PTCL). However a limited number of customers are being served by private operators for FLL and WLL as shown in Figure-2.1 and Figure-2.2 respectively:

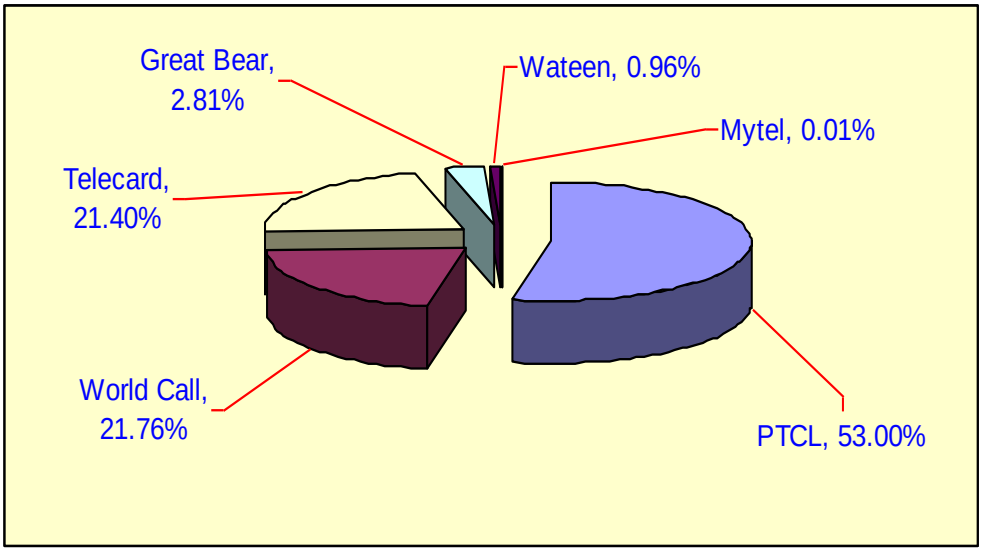
Figure 2.1
FLL Subscribers, Pakistan, 2008



In the provision of FLL/WLL services, interest has been shown by foreign investors. Omantel has bought 60 percent equity in Worldcall whereas Qatar Telecom (Q-Tel) has taken 75 percent stake in Burraq.

Telecard is planning to sell 55 percent shares to a South Korean Telecom company in the near future. If and when it happens, the market in Pakistan for these services would have a strong presence of Asian regional players. It is expected that rating of telecommunication will improve. The telecommunication market in Pakistan enjoys fair competition, has a level playing field and has smooth entry procedures.

Figure-2.2
WLL Companies Share, Pakistan, 2008



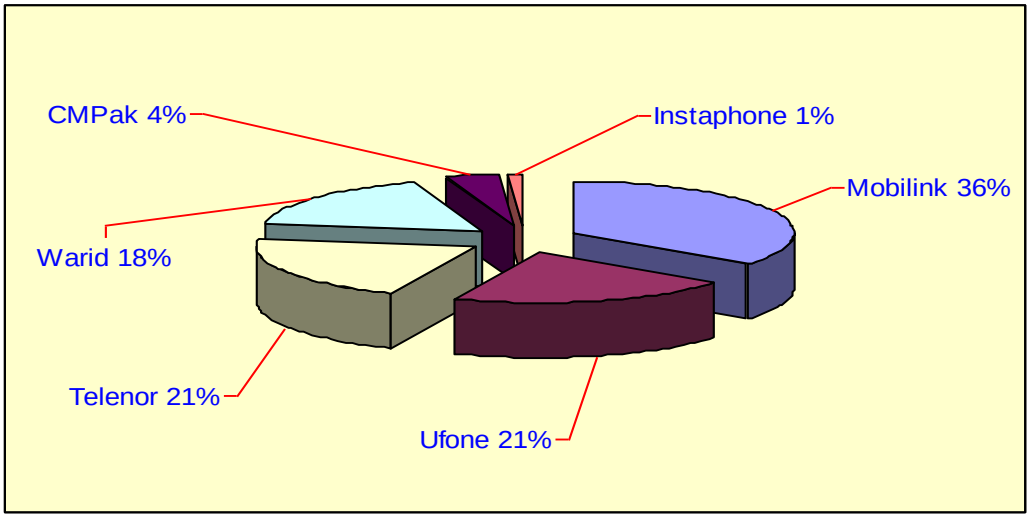
Source: PTA Annual Report-2008

2.2 Growth in Mobile Telephony

In the mobile telephony, the growth has been rapid as the operators in this sub-sector have invested substantially in the expansion of their network. The buoyancy in the mobile market has attracted important telecommunication operators to Pakistan. In this regard, entry of China Mobile Company deserves a special mention as this company has purchased the Paktel Company in 2007. It invested heavily in modernization and expansion. SingTel, a Singapore based Telecommunication Operator had acquired 30 percent stake in Warid Telecom. Warid Telecom was doing well in the provision of mobile since it had started the operation in 2005. With the entry of SingTel, Warid Telecom strengthened its corporate and management capacity. Ufone, a subsidiary of PTCL, has been taken over by Etisalat when it had purchased PTCL in 2006. The operation of Ufone expanded rapidly since its take over by Etisalat. European investor, Telenor, continues to expand with the emphasis on improving quality in its operations. The largest Mobile company i.e. Orascom's Mobilink has, however the highest coverage. Mobilink has floated a number of attractive tariff packages. This mobile company is one of the leading contenders for obtaining license for 3G services. The mobile sector in Pakistan is characterised by intense competition. The rate of growth in the mobile telephony is quite high. In view of this large base of subscribers in absolute term, the rate of growth in percentage term is declining. The Universal Service Fund Company in the Ministry of Information Technology (MoIT), was established for promotion of telecommunication services in the un-served / underserved areas in Pakistan. The availability of mobile service throughout the country is expected to increase as more and more remote areas are given out to companies with subsidy provided by USF.

Rollout by the different cellular operators (CMOs) continues and latest figures about their market share are shown in Figure-2.3 below:

Figure-2.3
Cellular Mobile Operator's Share, Pakistan, 2008



The Instaphone, one of the earliest mobile operators, has not been able to pay fee for renewal of its license. Consequently license of M/s. Instaphone was renewed on 19th April, 2005 on receipt of first instalment of US& 14.5 million. thereafter it failed to discharge its financial liabilities, hence, was show caused and its license was terminated which was challenged in the Islamabad high Court and decision in the matter is pending till date.

PTA is planning to award at least three licences for the provision of 3G service in Pakistan. The award of licences shall be done through an auction process under which additional radio spectrum will be allocated to the companies who will get the license.

2.3 New Technologies in Service Provision

Of late, new services based on advanced technologies have been introduced by different operators. WiMAX has been launched in the major cities of Pakistan. The licensees who are operating WiMAX are using the frequency band allocated to them for wireless local loop auction in 2006. This augus well as it provides an alternative to the subscribers for telephony, high speed data links and video transmission. Main players of WiMAX are Wateen Telecom, (UAE based group), Burraq and Mobilink. Existing operators are also investing heavily in the telecommunication infrastructure. Mobilink has laid a nation wide optic fibre network. Similarly Wateen Telecom has completed laying of its own optic fibre network which will end PTCL's monopoly in long distance media. Micronet Company which provides broadband service in partnership with Telecom Malaysia International (TMI) has also laid a trans-country optic fibre cable network. The extra bandwidth on the trunk routes coming out of these projects will enable Mobile, WLL, Internet and Broadband companies to expand their operations.

Another major step has been taken by PTA for provision of competitive telecommunication services in the Northern Areas and Azad Jammu and Kashmir (AJ&K). The market has been deregulated and licenses have been granted to a number of parties for Mobile, WLL, Fixed Local Loop and LDI services. This will end the monopoly enjoyed by Special Communications Organization (SCO). SCO shall, however, continue to provide long distance media to the new licensees. An optic fibre link has been installed to serve northern Areas. As a back up to optic fibre, SCO is installing a STM (1+1) digital radio relay system connecting Gilgit and Northern areas with Rawalpindi which is expected to be completed by January 2009.

The two companies i.e. Universal Service Fund Company and R&D Company, which were created under the Ministry of IT, as the implementation instruments, are active in un-served and underserved areas. USF Company awarded contracts for rollout of Telecommunication services in the un-served areas of Malakand Agency and Upper Sindh in 2007. This company is planning to award further network roll out contracts after due process of auction to further remote areas in Balochistan, Punjab, Sindh and NWFP. It will help to provide coverage to the entire population for Mobile and other services. The R&D Company on the last Telecommunication Day i.e. 17th May 2008 announced grants for the treatment of the disabled persons with eye sight problems. The use of gadgets by disabled would help them to communicate through telephone and Internet. The USF Company is also working on a scheme to provide subsidies for broadband services to private and public institutions in the field of education, health, vocational training and postal services etc. The provision of broadband services to these institutions will improve the access to government offices and departments. This will cover police offices/stations, hospitals, schools, universities, revenue & taxation organizations, non-governmental and commercial organizations.

2.4 Recent Trends

In Pakistan, De-regulation Policy for the Telecommunication Sector (July 2003) and Mobile Policy (January 28, 2004) are now coming to the end of their five year cycle and are due for review and modification / changes. Ministry of IT has embarked upon on this mission and is likely to issue a new comprehensive policy soon. After successful experience of deregulation, competition in services and privatization of PTCL, government has gained a lot of experience and will use the lessons learnt from its past experience for further improvement in the policy so that growth in telecommunication should be continued. It needs, however to be noted that the telecommunication manufacture industry in Pakistan is at a nascent stage. Hundreds of shops have come up in the country to repair Mobile sets and sell the accessories. The Mobile sets as well as their accessories are all imported. This is a source of heavy drain on the foreign exchange when the country is already facing a trade deficit. Government is planning to announce some policy measures to encourage manufacturing of Mobile handsets in Pakistan.

On the 17th May 2008, PTCL announced the launching of Internet Protocol TV (IPTV). This is a significant launch by the largest fixed telephone operator and likely to attract customers because the cable TV companies in Pakistan are generally smaller players and are not able to provide quality services. However, the weakness of PTCL's Out Side Plant (OSP) network is likely to be a big hurdle in the smooth running of the new service by PTCL. The cable network and subscriber loops are often non-functional and suffer from low insulation and excessive breakdown. Installation of an ADSL with DSL on such cable pairs can pose serious problem in the way of provision of reliable services to customers. PTCL is determined to upgrade its OSP network. This will improve the functioning of IPTV as well as broadband services.

2.5 Important Policy Milestones

The important milestones / developments in the telecommunication sector of the country since independence to date is given in tabular form in Table 2.1:

Table 2.1

Important Milestones / Developments in the Telecommunication Sector, Pakistan, 1947 to date

Year	Changes / Developments
1947	Pakistan Post & Telegraph Department (P&T) placed under the administrative control of the Ministry of Communications.
1952	Telephone Industry of Pakistan Ltd. established as a Joint Venture with the collaboration of M/s Siemens of Germany.
1962	P&T Department bifurcated into Pakistan Telegraph & Telephone Department (T&T) and Pakistan Post Department.
1962	Coaxial Cable System commissioned for backhaul transmission system.
1962	Introduction of Edel-metal Drehwehler (EMD) Switch.
1962	Start of Point to Point Subscriber Trunk Dialling.
1969	Carrier Telephone Industries established as a Joint Venture with M/s Siemens.
1969	Commissioning of first wideband backhaul microwave system.
1973	Establishment of Special Communication Organization (SCO) as Telecommunication Operator for Azad Jammu & Kashmir and Northern Areas under Ministry of Communications.
1973	Commissioning of first Satellite Earth Station in Karachi for international communication.
1974	Transmission of National Television Programs through Microwave Network
1976	Commissioning of International Gateway Exchange for international traffic
1978	Start of Nation wide Dialling
1984	Karachi-Fujera submarine cable link established between Pakistan-UAE
1985	Introduction of Digital Switch for telephone service
1989	Award of license for radio paging network.
1990	Award of two Mobile licenses by the Ministry of Communications to the private sector.
1990	Conversion of T&T Department into Pakistan Telecommunication Corporation (PTC)
1991	Award of licenses for Card Payphones Operators in private sector by the Ministry of Communications.
1992	Issue of Third Mobile License by Ministry of Communications.
1993	Opening of First Trans-country Optic Fibre Link.
1994	Sale of 12% shares of PTC in the market as vouchers.
1995	Start of Internet service in Pakistan. Telecommunication Act 1996 establishing frame work for creation of, Pakistan Telecommunication Authority (PTA), Frequency

Year	Changes / Developments
	Allocation Board (FAB), and National Telecommunication Corporation (NTC). PTC under the Act was converted into PTCL as a Public Limited Company listed at stock exchanges of Karachi, Lahore and Islamabad.
1996	Pakistan Telecommunication Authority starts functioning as an independent Regulatory body. Award of licenses for non voice services
1997	Pakistan signed WTO Telecommunication Schedule
1997	Vehicle Tracking Service launched
1999	SE-ME-WE-III Submarine optic fibre cable landing point established.
2000	Creation of Ministry of Science & Technology with Information Technology & Telecommunication Division.
2000	Introduction of Calling Party Pay (CPP) regime.
2000	Award of fourth Mobile Licence to PTCL (Ufone) by PTA.
2001	Ufone starts operation.
2002	PTCL monopoly in basic telephony ends
2002	PTA transferred to the Cabinet Division.
2004	Announcement of New Telecommunication Policy.
2004	Creation of Ministry of Information Technology & Telecommunication.
2004	Two new licenses (5^{th} & 6^{th}) for Mobile awarded through auction by PTA.
2004	WLL, FLL and LDI Licenses awarded to private companies by PTA
2005	Mobile Companies are allowed to operate in Azad Jammu & Kashmir.
2005	SE-ME-WE-IV submarine optic fibre cable. Landing point established.
2006	Management of PTCL transferred to M/s Etisalat
2006	Government Shares in CTI sold to M/S Siemens.
2006	Trans World (TW) submarine optic fibre cable landing point established.
2006	President's Rozgar scheme started in the country
2006	Telecommunication Act amended
2007	Q-Tel buys shares of Burraq Telecommunication
2007	Omantel buys shares of World Call
2007	China Mobile takes over Paktel
2007	PTCL started broadband service
2007	Wateen Telecom started WiMAX services
2007	Universal Service Fund (Guarantee) Limited Company established.
2007	USF first auction of lots for Malakand
2007	National ICT R&D Fund (Guarantee) Limited company established.
2008	SingTel buys shares of Warid Telecom
2008	Deregulation of Telecommunication Services of AJK & NA
2008	IPTV service launched by PTCL on trial basis in selected cities of Pakistan.

2.6 Distinct Periods of Pakistan Telecommunication History

Pakistan telecommunication history can be divided into three distinct periods. First period which spans years 1996-2001 was historic in the sense that Government had issued a policy paper announcing its intention to restructure the sector and to prepare it for deregulation and privatization. Telecommunication Act 1996 was the first comprehensive law passed replacing the Telegraph Act of 1886. Government owned Pakistan Telecommunication Corporation (PTC) was converted into a private limited company called Pakistan Telecommunication Company Ltd. (PTCL) Legal provisions were included in the Act to allow induction of a strategic investor in PTCL who would take over the management. An independent regulatory body namely Pakistan Telecommunication Authority (PTA) was created. A second regulatory organization called Frequency Allocation Board came into existence to deal with radio spectrum. A new corporate body National

Telecommunication Corporation (NTC) was formed to manage and operate the Telecommunication network for the Government and Defence organizations. To meet pension liability of privatized PTCL employees Pakistan Telecommunication Employees Trust was also established. The law provided for liberalization of all telecommunication services including basic telephony but PTCL was granted seven year monopoly in basic telephony as an incentive for its would be investor. The period under review witnessed liberal licensing of all value added services. Investment in mobile telephony did not pick up by much. Fixed telephone lines continued to expand at a rate of over 10 percent per year. Various factors were responsible for comparative lower growth in cellular mobile. One was high rate of General Sales Tax (GST) 25% on call charges and price of handset was beyond affordable limits of common man. On demand of the industry, GST was gradually reduced to 15 percent. However with-holding tax of four percent on fixed phone and ten percent on mobile service was imposed. Custom duty on telecommunication equipment was reduced. As a part of measures to encourage mobile users Calling Party Pays (CPP) regime was introduced in year 2000. PTCL's subsidiary i.e. Ufone entered the market and became the (second GSM operator). Although grant of cellular license was objected to by three existing operators, it had a very positive effect on the market.

Second period extending over years 2002 to 2004 saw a lot of activity. PTCL Monopoly in basic telephony ended in 2002. New Telecommunication (2003) Cellular and Broadband (2004) policies were announced by the government. In the light of the policy decision radio frequency bands were auctioned and licenses were issued to two new cellular mobile players namely Telenor and Warid for GSM Mobile service. This raised the number of cellular mobile service licenses to six. Analysts consider this number to be excessive. They thought that market space was not enough for more than five players. Subsequent developments proved this contention correct. However the auction raised a lot of money for the regulator (US$ 586 Million). Twelve licenses were issued for Long Distance International (LDI) service which permitted the licensees to set up gateway exchanges and carry international and domestic long distance traffic and introduce calling cards.

As a result of competition the domestic and international telephone tariff saw a sharp decline and traffic volumes increased.

In the same period rate of custom duty for import of mobile handsets were abolished and instead Rs 2000/- per connection were prescribed as an activation charge for a new connection. It was later reduced to Rs 1000 on the demand of the mobile industry. With the start of mobile service by Telenor & Warid the competition became intense and all mobile companies revised their call and airtime tariff downwards attracting people in the lower income groups and number of users multiplied. Cellular mobile service coverage spread throughout the country and became a household name. WLL service was launched only by six companies out of numerous companies which purchased the spectrum. WLL

subscribers crossed a figure of two million mark. The WLL has remained as a second choice as cellular mobiles were preferred by a majority of subscribers.

Years since 2005 have seen the stabilization of the telecommunication market. PTCL was transferred to Etisalat, a UAE company which was successful in buying strategic stake of 26 percent shares at a price of US$ 2.59 billion.

Cellular mobile operators continued to design new and attractive tariff packages which further lowered the call rates. As an encouragement of the sector, government has reduced activation charges on new mobile connection from Rs 2000/- to Rs 500/-. Broadband services, through fixed and mobile network were launched by different operators. New technology in mobile telephony was introduced in Azad Jammu & Kashmir and Northern Areas. Special Communication Organization (SCO) had the exclusive mandate for provision of telecommunication services in these areas. It was decided to extend deregulation to the Northern Area and licenses were issued by PTA for cellular mobile service. Also LDI and WLL services were opened to private sector.

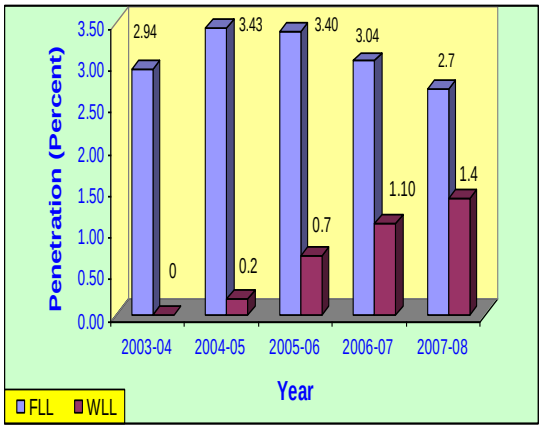
More recently the economy of Pakistan has been facing serious challenges. Government has reviewed tax rates in different sectors. The telecommunication sector has also been affected by this revision. GST rates on calls have been increased from 15 to 21 percent. Custom duty has been reintroduced on import of hand set at rate of Rs 750/- per set. The growth rate of telecommunication services seem to be slowing. Foreign direct investment in the sector may also decrease.

The industry players are arguing for withdrawal of the new taxation measures. The arguments raised by the industry are seen to be sound. It is hoped that government shall withdraw the new taxes so that momentum for expansion of telecommunication services can again build up.

2.7 Indicators

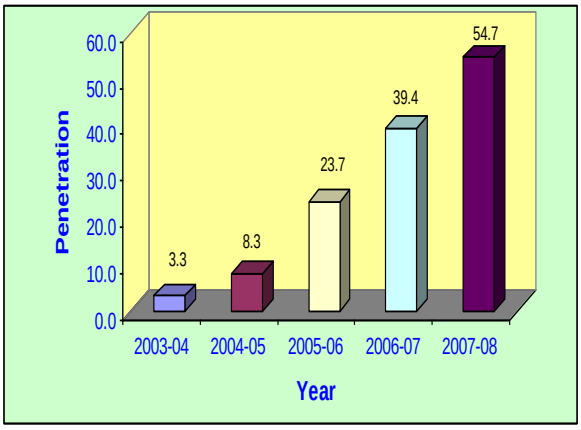
The history of the telecommunication till present day will not be complete without depicting the effect of the policies framed to promote it. One can see from the indicators that the government policy in force has had a positive effect on development of telecommunication service and market in Pakistan. Not only new telecommunication services have been introduced in the market, the existing services have registered a marked increase in the growth rate. Figures-2.4, Figure-2.5 and Figure-2.6 show the teledensity over the last five years.

Figure-2.4
Penetration of FLL/WLL Services, Pakistan, 2008



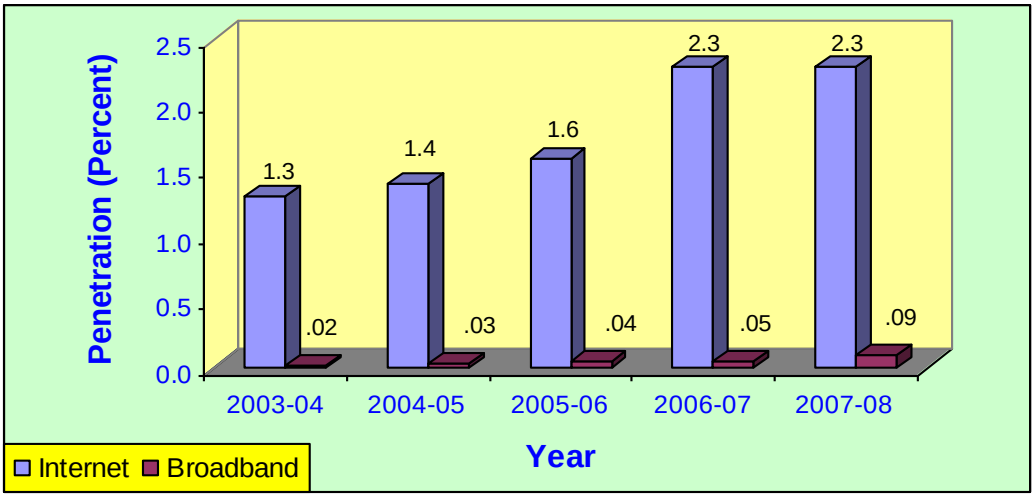
Source-TEACH & PTA Report 2008

Figure-2.5
Penetration of Mobile Phone, Pakistan, 2008



Source-PTA Report 2008

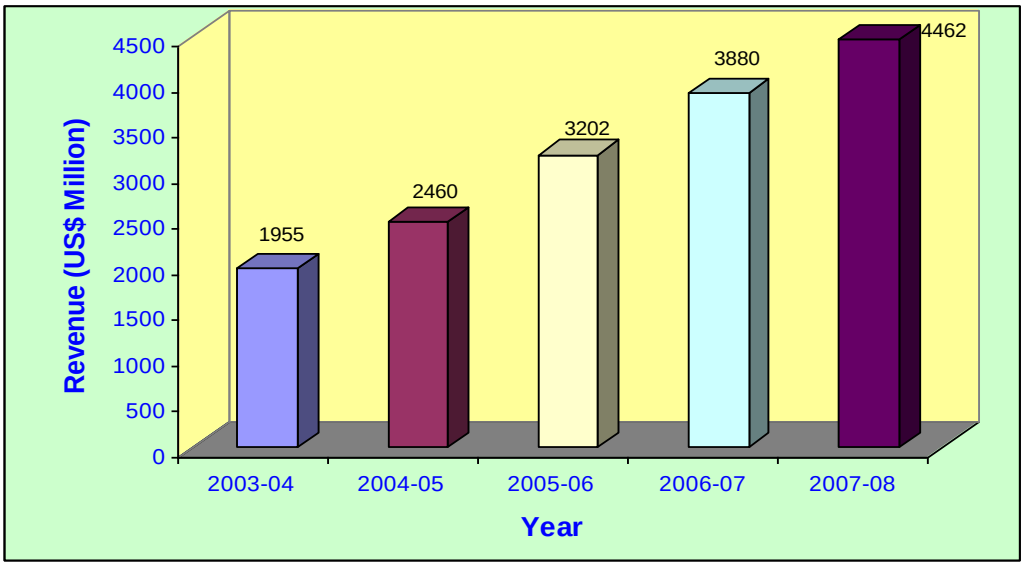
Figure-2.6
Penetration of Internet/Broadband Services, Pakistan, 2008



Source-TEACH

Value added services like PCOs and SMSs have also registered higher growth rates. The FLL lines based on POT have registered a decline in number. However a substitute in shape of WLL has appeared and its growth has to some extent compensated for the reduction in number of FLL lines. The fixed line PCOs/Payphones have likewise been supplemented by WLL and mobile PCOs/Payphones. So in the overall numbers, the increase in the PCOs/ Payphones continues. As a result of increase in the subscribership and use of different telecommunication services, the telephone and data traffic has been increasing. As a consequence, the telecommunication revenues have registered increase as well. The trend of yearly growth of telecommunication revenue is presented in Figure-2.7.

Figure-2.7
Yearly Telecommunication Revenue, Pakistan, 2008

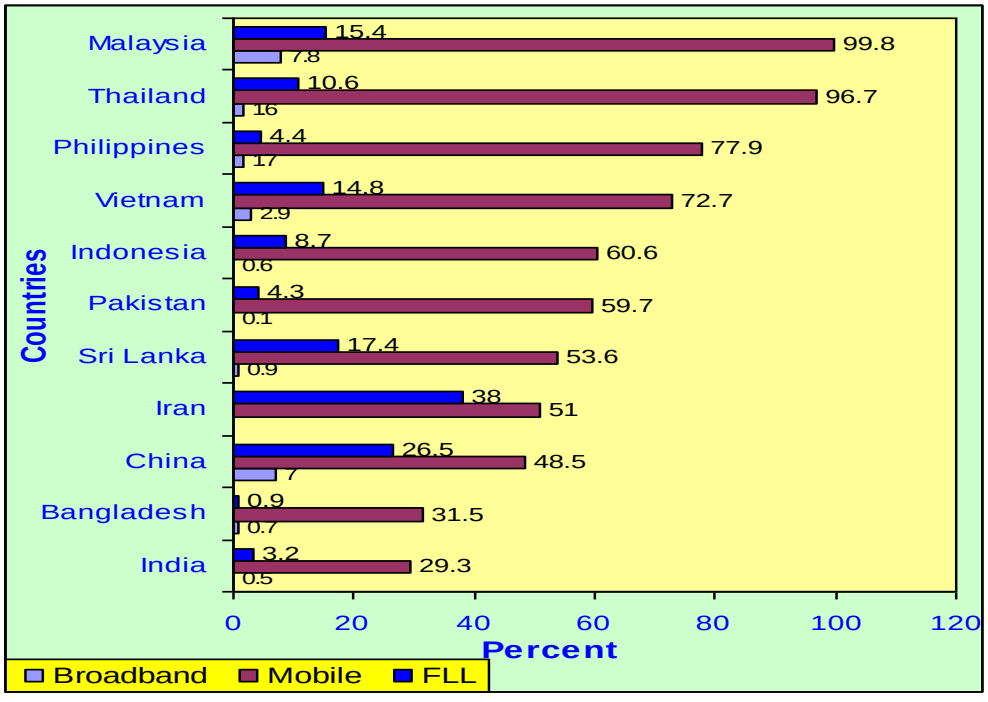


Source-TEACH

It is worthwhile to compare the performance of the Pakistan telecommunication market with some countries of Asia Pacific region.

The regional comparison of telecommunication penetration of selected countries is presented in Figure-2.8.

Figure-2.8
Comparison of Penetration of regional countries, Pakistan, 2008



Source-TEACH

Indicators in terms of penetration of major services like fixed telephony, mobile phone and broadband have been shown in respect of selected countries. Amongst these countries, Pakistan ranks at 13 for FLL, rank 11 for mobile phone and rank 16 for broadband penetration.

The size of world telecommunication market in terms of annual revenue is estimated at US$ 1200 billion, which has expanded over the last two years at a rate of six to seven percent per annum. The share of developing countries in total global revenue is accounted for as thirty two percent in the year 2007. The share of Asia Pacific region in the world market is around US$ 300 billion i.e. twenty-five percent of the total. The share of Pakistan in the Asia Pacific region market was around 1.5 percent. The Pakistan annual revenue grew from US$ 3.88 billion to US$ 4.46 billion indicating growth of 13 percent from 2007 to 2008. The size of telecommunication market is 4.9 percent of world GDP. In Pakistan telecommunication revenue is 2.78 percent of GDP on annual basis.

From above, it is concluded that telecommunication growth in Pakistan is appreciable. This is a good start in the 21st century and is expected to provide necessary infrastructure support to the economy.

Chapter-3

Rural Areas and Telecommunication

3.1 Introduction

Planning Commission of Pakistan has estimated total population of the country at 153.96 million in 2005-06 on the basis of latest population census of 1998. Population has been recorded as 161 million in the Annual Plan 2008-09 of by Planning Commission of Pakistan. Of the total population, 107.2 million, which is about two-third of total population, live in rural areas and 53.8 million, which is about one-third of total population, live in urban areas. By 2010, total population is expected to increase to 167.37 million at overall annual growth rate of 1.7 percent, with the rural and urban component of 106.55 million and 60.82 million respectively. During the five years period i.e. 2006-10, the urban population will grow approximately at 3 percent while rural population will grow approximately at 1 percent annually. The rural share of population will remain high at 64 percent of total population in 2010. The latest figure of population as estimated on Jan 4, 2009 is 165.3 million**.** Pakistan is the 6th most populous country in the world[1]. Therefore, for the uplift of economic well-being in the country, policy makers have to pay due attention to the uplift of rural areas of Pakistan.

3.2 State of infrastructure and social developments

Medium Term Development Framework (MTDF) 2005-10, presents a detailed profile of the demography of Pakistan. There are about 50,000 villages in the country with population below 10,000, around 448 small towns with population between 10,000 and 100,000, 40 medium-sized towns with population between 100,000 and one million, 7 metropolitan cities of Faisalabad, Multan, Gujranwala, Hyderabad, Peshawar, Rawalpindi and Quetta with population between one and 10 million, and 2 mega cities of Karachi and Lahore with population above 10 million. Infrastructure and social services in both rural and urban areas are deficient and require substantial improvement to support a higher growth rate of infrastructure deficiency. However, the situation in rural areas is much worse than that in urban areas as shown in Table 3.1.

[1] See Pakistan Economic Survey 2007-08

Table-3.1
Socio-Economic Indicators, Pakistan, 2007-08

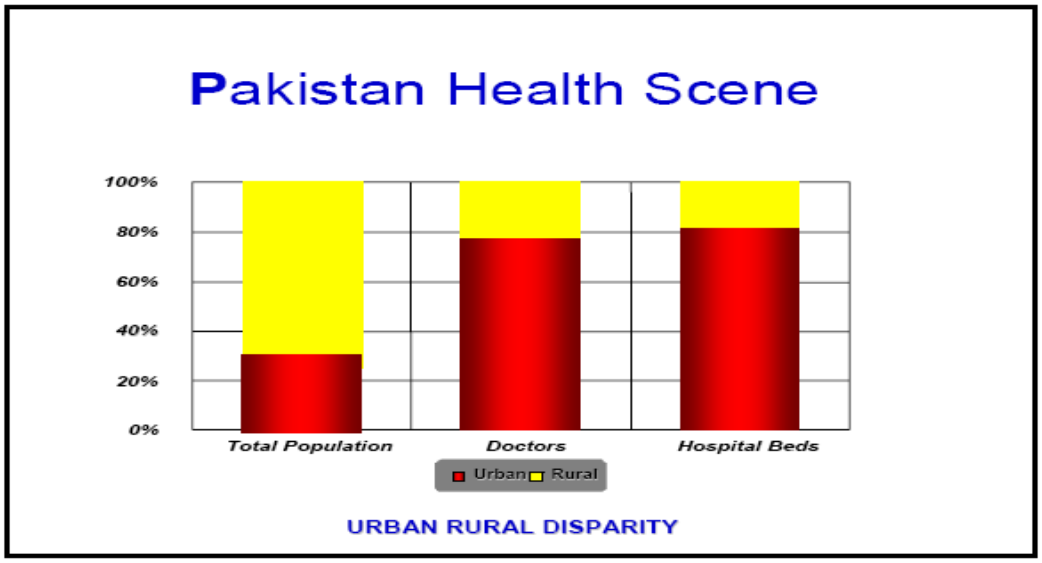
S/N	Sector	Unit	Rural	Urban	Total
1	Population	(million)	107.2	53.8	161.0
		Percent	66.5	33.4	100
2	Labour force	(million)	34.5	15.8	50.6
3	Labour force participation 2006-07	Percent	30.1	28.2	30.1
4	Un-employed Labour force 2006-07	Percent	1.6	1.1	2.7
5	Population below poverty line 2004-05	Percent	28.1	14.9	23.9
6	Literacy rate	Percent	40	69	54
7	Municipal water supply	Percent	57	89	73
8	Municipal sewerage/ sanitation	Percent	32	65	50
9	Roads	(kms)	97881	157975	255856
10	Basic health units	(nos)	5563	-	5563
11	Population / basic health unit	(nos)	19,134	-	-
12	Rural health clinics	(nos)	645	-	645
13	Population / rural health clinic	(nos)	166,202	-	-

Source: Rural Development Indicators, 2007-08-Chapter 19 (Rural Development, Special Areas and Drought Recovery Program)-Annual Plan 2008-09-Pakistan Planning Commission

Though Labour force participation in rural areas (30.1 percent) is greater than that in urban areas (28.2 percent) and unemployment rate is less in rural areas (1.6 percent) than that in urban areas (1.1 percent), yet the incidence of poverty is much greater in rural areas (28.1 percent) than that in urban areas (14.9 percent). To put it differently, one out of every 4 people in rural areas lives below poverty line. It means that he/she is unable to meet his/her bare minimum needs of nutrition, clothing and shelter. In such a miserable situation, he/she would not think beyond his/her own interests and one should not expect him/her to play any part in greater interest of the society. Society and government need to devote attention to reduce incidence of poverty.

Literacy rate is quite low in rural areas, 40 percent as compared to 69 percent in urban areas. It means that two out of every five persons in rural areas are unable to read, write and do basic numeric that are almost inevitable to start any profession, independent business and engage in any productive job. In case of females, the situation is even worse. Similarly, municipal water supply is scarce, sanitation and sewerage conditions are miserable, and availability of roads is rare in rural areas of Pakistan.

Figure-3.1

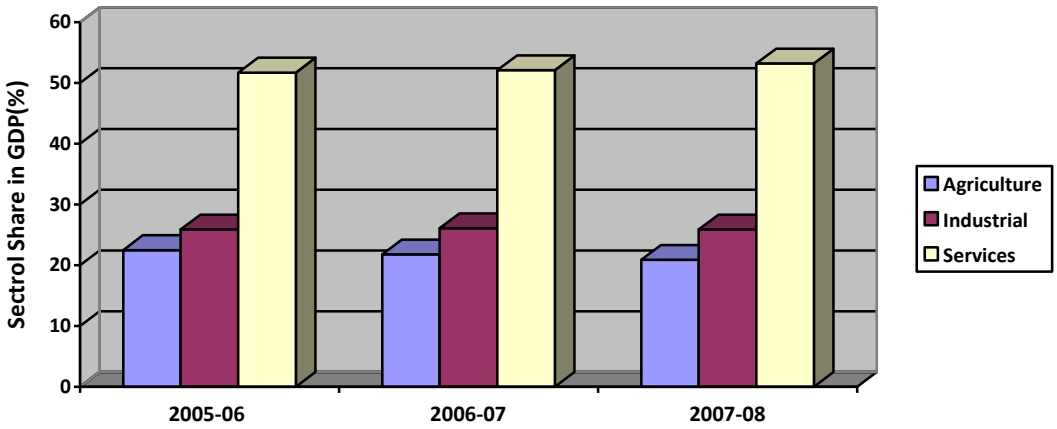


Source: SUPARCO Telemedicine Pilot Project

Health facilities are also inadequate in rural areas. There is just one basic health unit for more than 19,270 people and one rural health clinic for more than 166,202 people. Unfortunately, Pakistan lacks even basic health care infrastructure. The figure 3.1 shows the urban and rural population disparity. A large population of Pakistan, 66.5% lives in rural areas while the percentage of doctors working in rural areas is only about 22%. The ratio of hospital beds is about 18% for the rural areas and about 82% for urban areas.

In Pakistan, the main stay of rural population has been agriculture sector of the economy that has contributed about 21 percent to GDP of the country in fiscal year 2007-08 as can be seen from sectoral shares in GDP in Figure 3.2.

Figure-3.2
Sectoral Share in GDP



Source: Pakistan Economic Survey 2007- 08

As can be seen from the first row in the Table-3.2, the share of agriculture sector declined from 22.5 in 2005-06 to 20.9 percent in 2007-08. The decrease in share of agriculture occurred in spite of bumper wheat crop in 2006-07 and bumper sugarcane crop in 2007-08 and impressively good maize crop in 2007-08. Dependence of agricultural produce on the vagaries of Mother Nature further intensifies the plight of rural population, especially in years of bad weathers. As a result, incidence of poverty remains high and quality of life remains low in rural areas of Pakistan.

According to Labour Force Survey 2006-07, employment opportunities in rural areas are limited. Consequently, most of the rural labour force residing in rural areas is self employed in agriculture sector. The problem of underemployment is also rampant and productivity is low. As can be seen in Table-3.2, about 60 percent of rural labour force is absorbed in agriculture sector while employment in other three main sectors of economy, manufacturing, trade and services, whose productivity is much more stable than that of agriculture, is only around 30 percent of total rural labour force.

Table-3.2
Labour Force Employment by Sector and Area, Pakistan, 2006-07

Sector \ Area	Urban	Rural	Total
Agriculture	6.52	59.90	43.60
Mining	0.04	0.14	0.10
Manufacturing	23.38	9.22	13.50
Electricity	1.24	0.54	0.80
Construction	6.61	6.54	6.60
Trade	27.16	8.83	14.40
Transport	7.99	4.25	5.40
Finance	2.86	0.39	1.10
Services	24.10	10.16	14.40
Others	0.10	0.03	0.10
Total	100.00	100.00	100.00

Source: Labour Force Survey 2006-07

Approximately 10 percent of total rural labour force is absorbed in each of these three sectors. On the other hand, roughly 75 percent of urban labour force gets jobs in manufacturing, trade and services sectors such that one-forth of total urban labour force is absorbed in each of these three sectors.

Figure-3.3
Labour Force Employment by Sector and Area, Pakistan, 2006/07
(Percent)

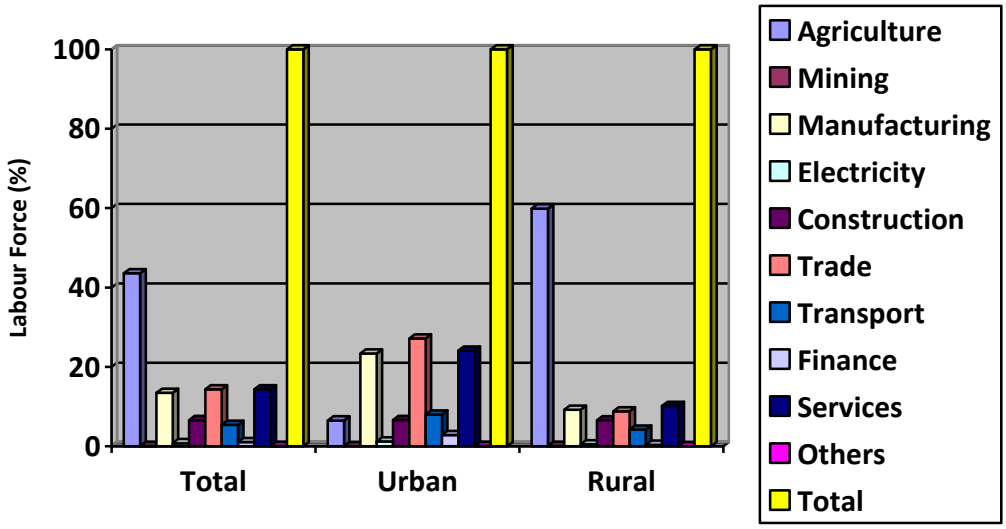


Figure 3.3 gives a better understanding of the facts regarding labour force employment by sectors and regions in Pakistan for the period 2006/07.

On top of other disadvantages of rural population, telecommunication facilities provided in rural areas are less and of lower reliability relative to urban areas.

As shown in the Table 3.3, ownership of fixed-line telephones is only 7 percent in rural areas i.e. 4 times less than that in urban areas. In the province of Punjab, rural population has 3 times less ownership while in the provinces of Sindh and NWFP, rural population has 6 times less ownership of fixed telephony. In case of mobile phones, comparative situation of rural and urban areas is not that bad but overall access to mobile phones in both areas is not satisfactory. Usage of fax and email is almost non-existent in rural areas and is meagre in urban areas.

Table-3.3
Ownership of Telecommunication Services by Residence and Region, Pakistan, 2008

(Percent)

	Punjab		Sindh		NWFP		All	
Telecommunication Service	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Owns fixed-line phone	28	9	24	4	39	6	28	7
Owns mobile phone	10	3	3	3	19	6	9	4
Uses fax	0	0	1	0	3	0	1	0
Uses e-mail	1	0	0	0	2	0	1	0

Source: Pakistan Rural Investment Climate Survey, 2005.

3.3 State of telecommunication services and rural development prospects

The role of telecommunication services in economic development of a country can hardly be exaggerated. The need of face to face contact of transacting parties becomes optional if transacting parties have access to telecommunication services. Usually negotiations to finalize a single social or economic transaction like going of a group of friends together for a picnic, or purchase of furniture that would satisfy the preferences of all family members may require frequent contacts, visits and discussions among concerned people. If telecommunication services are not used and face to face contact is required for such negotiations, then it would involve a lot of travelling, use of time and would involve large sum of expenditure. However, if telecommunication services like phone, Internet and video conferencing are used liberally, the time and finances to complete a given transaction is reduced significantly.

Necessity of keeping oneself abreast of market news is more pronounced in case of financial products whose prices change more frequently than commodity prices and each transaction in financial instruments may involve thousands of rupees. To put it differently; reward on financial transactions heavily depends on analysis of new information that can be instantly accessed only through telecommunication services like phones whether fixed, wireless or mobile, internet and fax. That is why, in business news on most of the TV channels, one can see security brokers holding receivers of phones in their hands and constantly keeping their eyes on computer/TV screens. They want to have instant access to latest news because that is the main clue to make money in financial markets.

Usage of telecommunication services also helps reduce inventory costs of big-volume items like tractors. Sellers of big-volume items usually display maximum features of their products on internet and TV channels and encourage prospective purchasers to place their orders by phone and internet with complete identification of the model of their choice. The sellers arrange the delivery of specified tractor from the company warehouse in minimum possible time directly to the doorsteps of purchasers. By using telecommunication media, if they have access to it, suppliers save inventory and transportation costs and purchasers save a trip to seller's shop and embarrassment if the model of their choice is not available in the showroom.

The most frequent users of rural telecommunications are better educated than average rural residents and may have higher incomes or be engaged in progressive agriculture or other employment where access to information is important. Better educated users call farther a field; others indicate that the most common characteristic of telecommunication users is that they are "information seekers" regardless of education or income source. Residential telephones contribute more to economic development than business telephones. The reason may be that in many developing countries, residential phones are often used for business activities, and are available 24 hours per day, whereas business phones are available only during work hours.

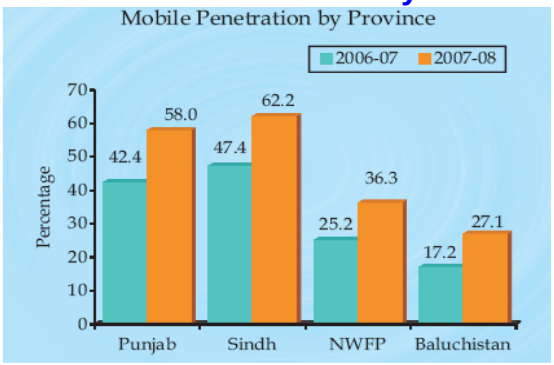
A bird's eye view on the telecommunication facilities currently available in the rural areas indicate that teledensity of the country has reached from 45% in 2006-07 to 58.8% and subscribers from 62.9 million to a total of 88.0 million in 2007-08. All operators are expanding their networks and up till end of 2007-08 almost 9,369 cities/towns/villages have mobile networks by one or all operators. Currently more than 91% of the population has access to mobile service all across Pakistan. Some areas of Balochitsan and NWFP remained uncovered due to disturbances in those areas. The Figure-3.4 shows the increase in cell sites during last five years and penetration in each province during the year as compared to last year which is a clear indication of coverage of more area including rural areas. According to BMI[2], mobile subscribers in Pakistan would reach 135 million in 2012 with average growth rate of around 20% to 25%.

Table-3.4
Cell Sites

Cell Sites by Company

	2003-04	2004-05	2005-06	2006-07	2007-08
Mobilink	1,164	2,392	3,935	5,522	7,339
Ufone	327	808	1,094	1,644	3,471
Instaphone	211	211	211	211	211
CM Pak	248	218	872	1,163	2,328
Telenor		403	1,738	3,255	5,017
Warid		505	855	1,930	3,152
Total	**1,950**	**4,537**	**8,705**	**13,725**	**21,518**

Figure-3.4
Mobile Penetration by Provinces



Source: PTA Annual Report 2008

Further, due to continuous decreas in tariff (Figure 3.5 left), huge traffic of short messages (Figure 3.6 right) has resulted as the charges of calls and SMS are now affordable by the people from rural areas.

Figure-3.5
Cellular Mobile Tariff

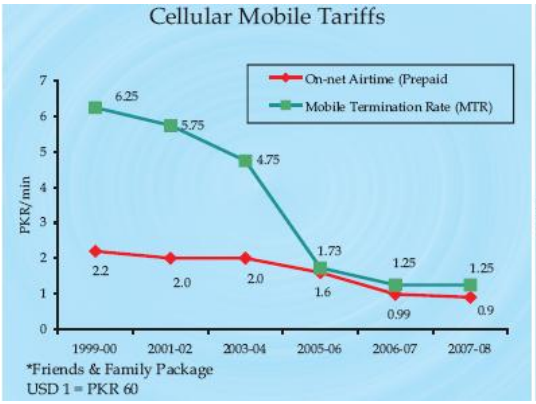
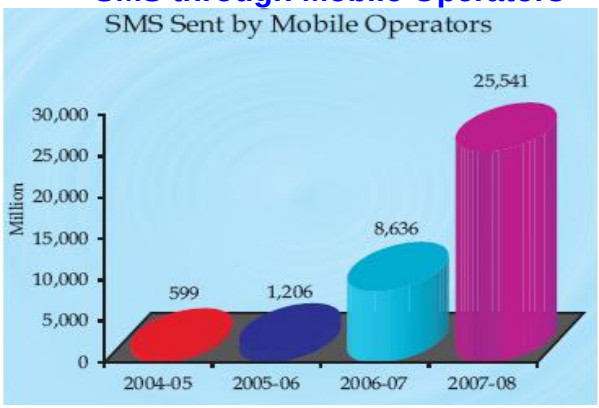


Figure-3.6
SMS through Mobile Operators

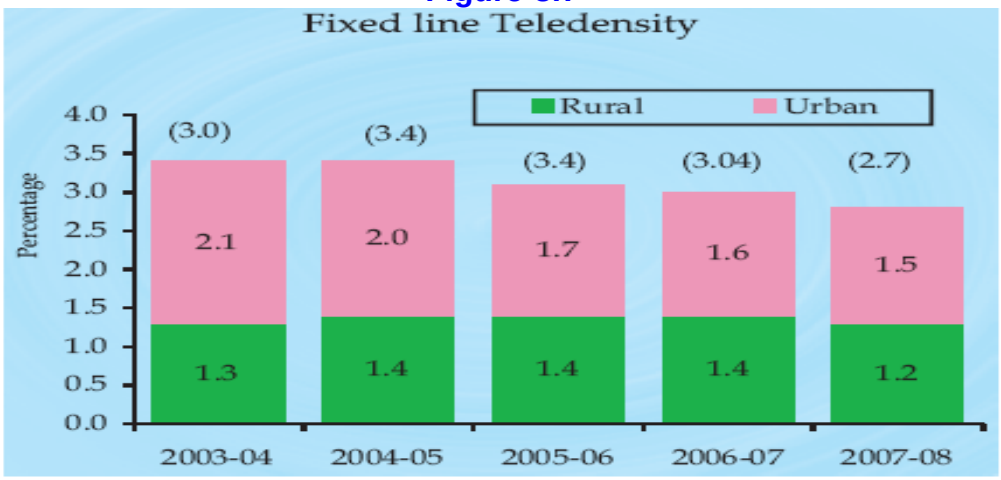


Source: PTA Annual Report 2008

[2] Pakistan Telecommunications Report Q2 2008,Published by BMI (Business Monitor International) – March 2008

Fixed line subscribers and teledensity dropped to 4.4 million and 2.7% respectively at the end of 2007-08. Figure 3.7 depicts the urban and rural fixed line teledensity during the last five years.

Figure-3.7



However, Wireless Local Loop (WLL) showed a positive growth trend though the growth rate was as low as 32% in 2007-08 which was almost 66% in 2006-07. Today total WLL subscribers are 2.23 million with 1.4% WLL teledensity. The continuous increase in WLL subscribers, WLL teledensity and cell sites may provide a boost to rural telecommunication provided necessary facilities are made available to respective operators.

Today, over 449,121 PCOs are working across the country. PCO share on fixed line network has declined from 31% in 2006-07 to 27% in the year 2007-08 while the mobile share has increased from 10% in 2006-07 to 14% in the year 2007-08.

3.4 International evidence on use / benefits of telecommunication in rural areas

Use of mobile phone and internet has been proved extremely beneficial in rural areas throughout the world. A few experiences extracted from various survey reports and research papers are reported briefly hereunder:

Grameen Telecom[3] has provided telephone access to nearly 3 million poor villagers beyond the reach of the main phone network. The village pay phones have brought many benefits for users, and most entrepreneurs are making a healthy profit.

In Africa[4], about 45 percent of Sub-Saharan African villages were covered by a mobile signal in 2006 (Figure-3.9, left). Coverage with a mobile signal does not mean connectivity. Nevertheless, with initiatives such as applying the Grameen Phone model in Uganda to legal license obligations to establish public

[3] Public Policy for the Private sector Note No. 205 March 2000
[4] ITU - Telecommunication/ICT Markets and Trends in Africa 2007

facilities in South Africa, African governments and companies have brought Mobile cellular phones to rural areas. Countries with mobile rural population coverage over 90 percent include Comoros, Kenya, Malawi, Mauritius, Seychelles, South Africa and Uganda. Other countries on the way include Botswana, Burkina Faso, Burundi, Cape Verde, Guinea, Namibia, Rwanda, Senegal, Swaziland and Togo all of which have rural mobile population coverage rates in excess of 50 percent. Research[5] shows that in villages around Kampala, Uganda's capital city, almost 20 percent of rural households have access to mobile phones.

Figure-3.8
Villages access to Telecommunication

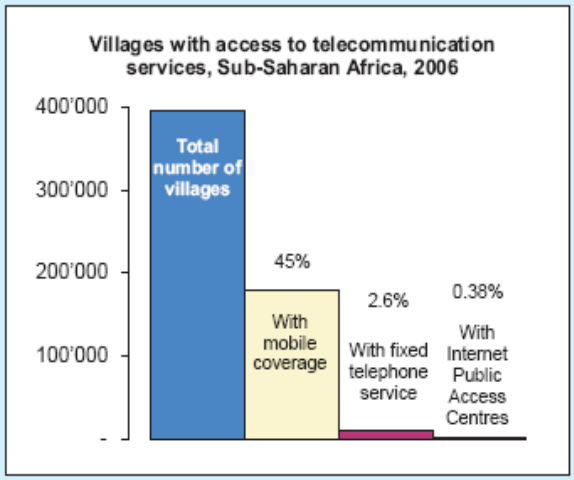
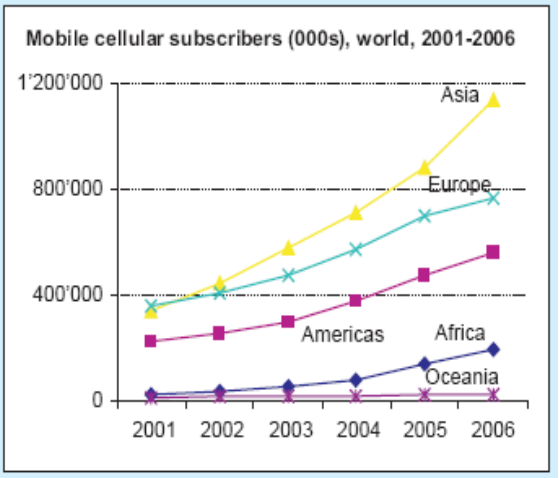


Figure-3.9
Mobile Subscribers, Africa and World



Source: ITU- Telecommunication/ICT Markets and TrendsIn Africa 2007

The Figure-3.9 on the right indicates a continuous increase in mobile subscribers particularly in Asia.

A recent review[6] of the literature found dozens of studies documenting economic and social impacts of mobile telecommunications. Use of mobiles by local fishermen in India, for example, enabled them to sell their catch for higher prices and, for the industry as a whole, lowered transaction costs and eliminated waste and thus made it more competitive. In Niger, mobiles enabled a more efficient market for buying and selling grain, generally lowering prices for consumers and raising profits for farmers-and may have helped avoid severe hardships during a 2005 food crisis. In Rwanda mobiles enabled micro-entrepreneurs to develop more business contacts. In Latin America and Tanzania mobiles were particularly important in finding work or employment possibilities. In fact, the mobile industry generates significant number of jobs, facilitates wealth accumulation and foreign direct investment for a country as whole, results a rise in penetration of mobile phones and accelerates GDP growth.

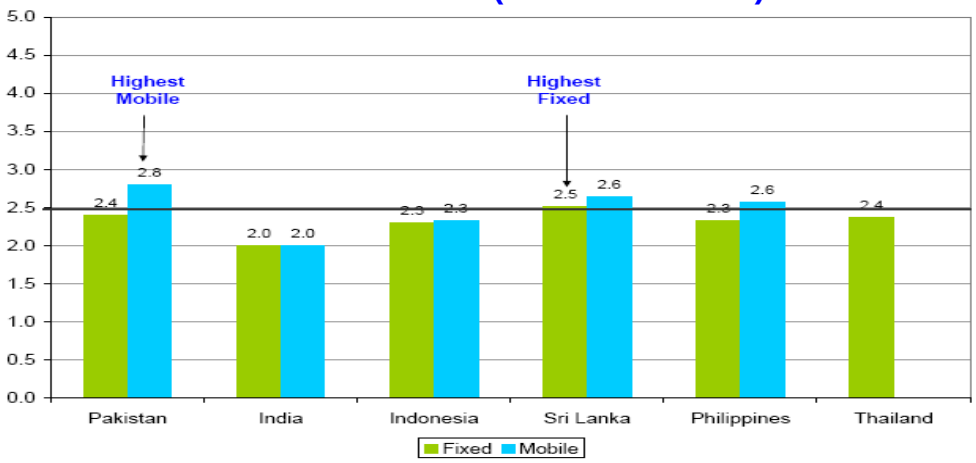
[5] The urban part of rural development: the role of small and intermediate urban centers in rural and regional development and poverty reduction by David Satterthwaite and Cecilia Tacoli

[6] Mobile telecoms in rural areas-World Resources Institute, USA June 2008 - www.i4donline.net

On August 16, China Mobile Limited unveiled[7] its mid-term performance in 2007. Its revenues amounted to RMB166.6 billion Yuan with a year-on-year growth rate of 21.6 percent in the first half of 2007 while its net profits increased by 25.7 percent year on year to RMB37.907 billion Yuan. Industrial insiders believe that the most important reason for China Mobile's profits to increase rapidly in the first half of this year is the strong growth momentum in the market in rural areas. Data show that half the newly increased subscribers of China Mobile were from the rural market in 2006.

According to a report[8] and statistics from the Telecommunication Regulatory Authority of India (TRAI), subscriber additions in rural areas are higher than those in metros. The number of new subscribers in the four metros combined was 10.3 million in 2008, compared with 11.3 million in rural areas. Mobile phones in rural India reached 70.83 million, registering an increase of 13.72 percent in the quarter ending June 2008. According to the analysis, the trend is likely to continue and subscriber additions in rural areas will exceed that of metros by 2012.

Figure-3.10
Universal service (fixed and Mobile)



In a study by TRE (Telecom Regulatory Environment) on Universal service[9], India with the second largest universal service obligation fund scored the absolute lowest. Sri Lanka, with minimal universal service activity scored highest in fixed and was in the top three in mobile as shown in Figure-3.10.

However, the Table 3.4 indicates that mobile penetration rate in Pakistan remained higher than India, Bangladesh, Sri Lanka and Nepal during last three years.

[7] ce.net- China Economic Net,
[8] ITEXAMINER.com
[9] TRE, CPR south, Manila, 2/12/2007

Table-3.5

Mobile Penetration of Regional Countries (%)

Countries	2004-05	2005-06	2006-07	2007-08
Hong Kong	123.1	124.4	137.2	140.9
Singapore	93.7	100.7	109.5	121.9
Malaysia	60.1	76.8	-	87.8
Pakistan	14.0	22.4	40.1	55.6
Sir Lanka	17.1	17.4	21.5	-
India	6.8	8.1	11.3	20.7
Bangladesh	3.9	7.8	19.83	24.9
Nepal	0.98	1.5	5.26	-

Note: 2008 Latest Available

Source: PTA Annual Report 2008

Figure 3.11 indicates the percentage of persons using internet and other services in Thailand[10] and Internet access from public facilities in Paraguay. In rural areas Figure-3.12, more than 35% persons are using mobile in Thailand whereas about 20% are using computer but just 10% are using Internet for their day to day requirements. In rural areas of Paraguay, internet access from public facilities is quite appreciable.

Figure-3.11
Usage

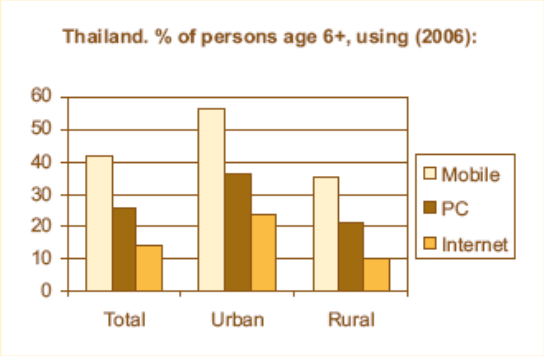
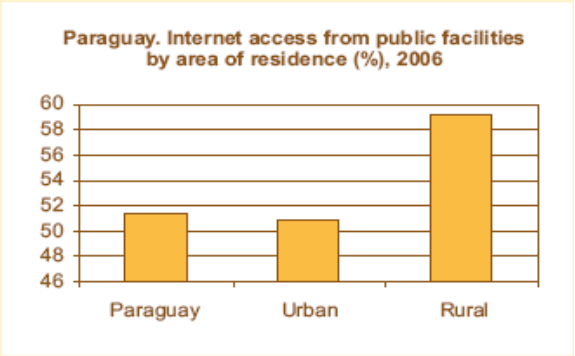


Figure-3.12
Access to Internet



Source: ITU- Measuring ICTs in villages and rural areas- May 2008

Less than three percent of the world's internet subscribers, or 10.7 million, were located in Africa in 2006 (Figure-3.11 left). Taking the population of Africa into consideration, this means that 1.3 percent of the inhabitants were subscribers to an Internet Service Provider (Figure-3.12 right). For Africa, as for other world regions, an internet subscription is often used by different members of the household, by clients of a cybercafé, by visitors at a library. Therefore it is estimated that the number of effective internet users in Africa is considerable higher at 4.8 users per 100 persons (Figure-3.14 right). Affordability, lack of fixed line infrastructure and a low level of ICT literacy are the most striking reasons for the low levels of internet use in Africa.

[10] ITU- Measuring ICTs in villages and rural areas- May 2008

Figure-3.13
Internet Subscribers World

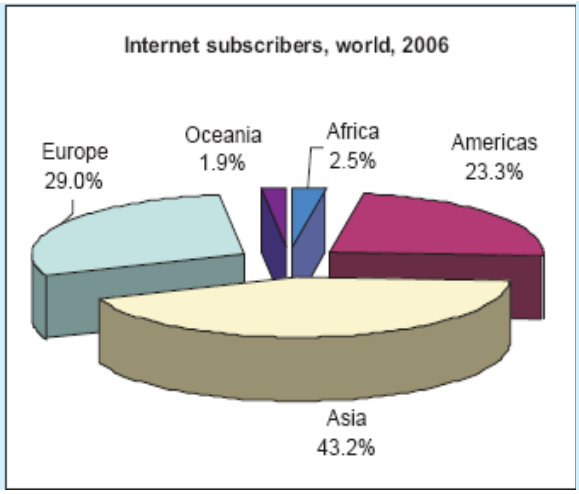
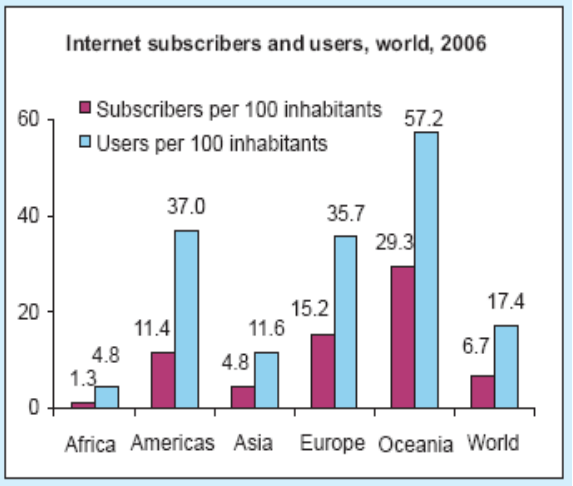


Figure-3.14
Users in the World



Source: ITU- Telecommunication/ICT Markets and Trends in Africa 2007

In the remote agricultural province of Lao Cai in Vietnam[11] a few shared community phones are being replaced with high-speed WiMax broadband connections and VoIP telephony for thousands of residents. In rural Cambodia, a new 3G/UMTS mobile network is being deployed for delivery of high-bandwidth wireless services, including live streaming of mobile TV channels. In rural India, farmers can monitor crop prices and place orders for goods electronically by visiting broadband "community centers" that are taking root around the country.

The benefits of Telecommunications in important Rural Sector as noted internationally are given hereunder[12]:

1. **Agriculture:** In the U.S., access to computerized databases has helped farmers to get higher prices for their crops and to enter foreign markets. Examples of profitable use of market information in developing regions range from Brazilian coffee growers contacting the Chicago futures exchange, to farmers in the Nile Delta taking orders from merchants in Alexandria by telephone, to Sri Lankan farmers obtaining market information from Colombo.
2. **Education:** The growth of interactive applications, ranging from audio tutorials and student interaction to computer conferencing and in some limited applications, fully interactive video is helping a lot in distance education. Corporate trainers have estimated that distance learning can cut training costs in half.

[11] Telecommunication August 13, 2007

[12] Economic and Social Benefits of Rural Telecommunications: A Report to The World Bank By Professor Heather E. Hudson, University of San Francisco-June 1995

3. **Health Care:** Telecommunications is used for several different functions in support of health care delivery:
   - Consultation to give advice to rural health workers, or directly to isolated patients;
   - data collection and record keeping;
   - training of health care workers;
   - education of target populations including expectant mothers, mothers of young children, groups susceptible to contagious diseases, etc.
4. **Employment and entrepreneurship:** Rural businesses in the U.S. are increasingly using telecommunications networks for competitive advantage. Information-intensive businesses such as "back offices," telemarketing, customer support and reservation systems have relocated to rural areas with high quality and affordable telecommunications.
5. **Traveling cost and time saving:** Telecommunications offers important benefits in overcoming the distance penalty that hampers business activities and service providers in rural and remote areas. The time value is most dramatic when money is directly involved, for example, in time transfers of funds between banks.

6. **Rural telecommunications users:** Hudson (1992) cites evidence from field interviews in northern **Canada**, **China**, the **South Pacific** and **Africa** that rural telecommunications users can often articulate precisely the benefits and/or savings in time and effort derived from access to a telephone. In Egypt, better educated individuals were more likely to make calls to major cities and administrative centers, whereas those with little education tended to call only to nearby villages and towns (Pierce and Jequier, 1983)[13]. In Costa Rica villages that benefited most from the PCOs tended to be larger and better off economically, with relatively better educated populations engaged in more progressive agricultural techniques.
7. **Social benefits:** Rural residents keep in touch with family members who have gone to the city or overseas to seek work; families contacting relatives scattered in many rural communities; and field staff such as nurses and teachers in rural posts using two-way radios or satellite links to keep in touch with colleagues and family members. There is anecdotal evidence from northern Canada, Alaska, and Outback Australia that the ability to stay in touch with family and friends makes isolated postings more tolerable, and may contribute to reducing turnover among field staff.

[13] Pierce, William B. and Nicolas Jequier. *Telecommunications for Development* Geneva: International Telecommunication Union 1983

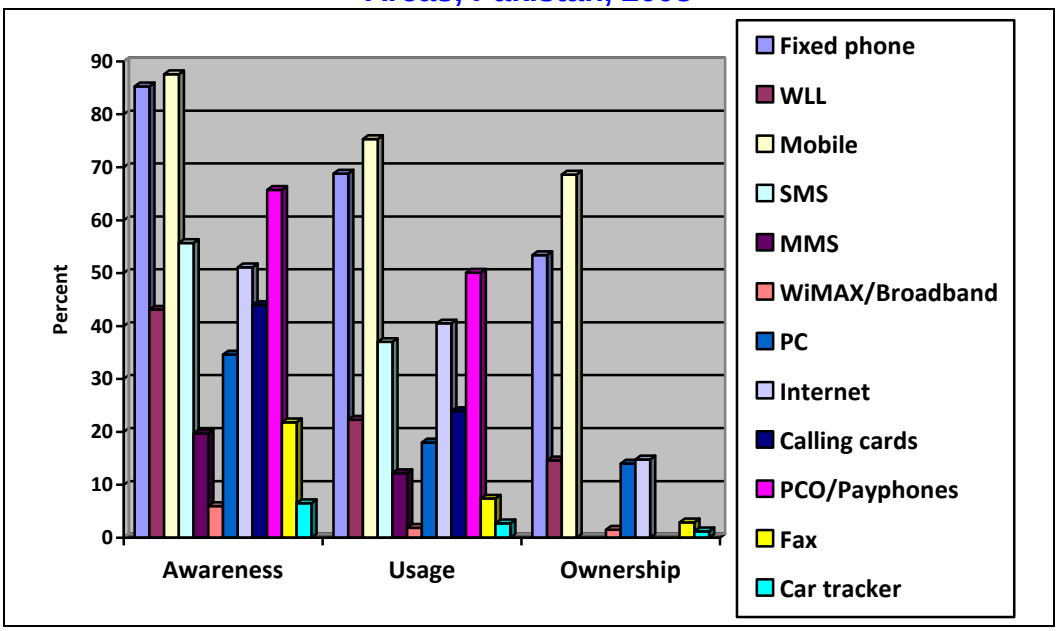
3.5 Pakistan situation

Realizing the immense spill-over benefits of telecommunication industry, government of Pakistan has launched a massive campaign to raise penetration level of telecommunication services in the country to international standards.

3.5.1 TEACH Telecommunication Survey 2008

Keeping in view the current status of telecommunication services, TEACH has carried out telecommunication survey 2008 reported in Table 3.6 which indicates that awareness, usage and ownership of telecommunication services have increased significantly. From the results, it appears that more than 85 percent of rural population is aware of the benefits of fixed and mobile telephones. Two-third of rural people understand that telephone calls can be made through PCOs and payphones. More than 50 percent people know about SMS and internet. Everyone living in a village is aware of at least one telecommunication service. The results are represented in Figure-3.15

Figure-3.15
Awareness, Usage and Ownership of Telecommunication Services in Rural Areas, Pakistan, 2008



Regarding usage of telecommunication services, two out of every three people in rural areas have used fixed telephones; three out of every four people have used mobile phones and one out of every two people has used PCO or payphone at least once in his life time.

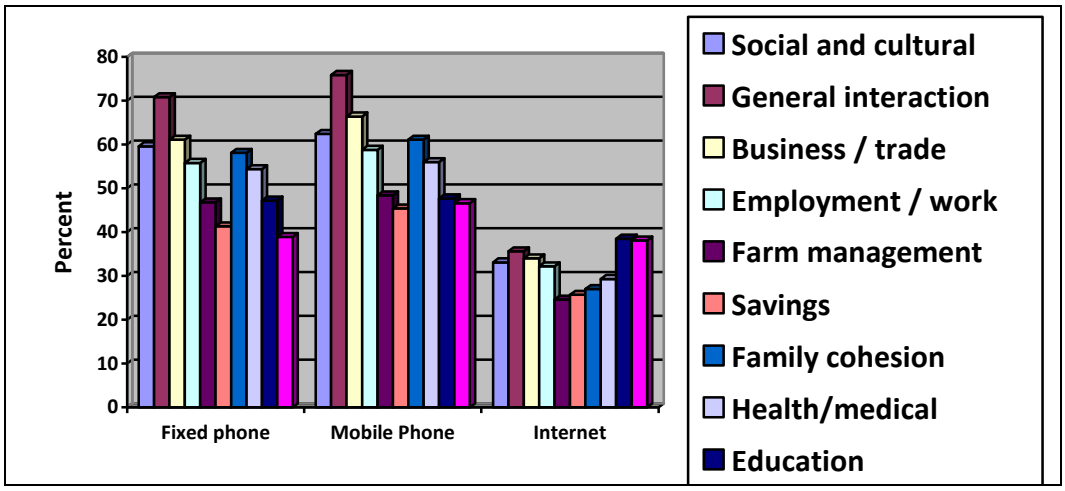
Usage of other telecommunication services like WLL, SMS, internet and calling cards is quite significant whereas usage of MMS, WiMax / Broadband, Fax and Car Tracker is quite negligible. Overall, 98 percent of rural people have used at least one telecommunication service at least once in their life time.

With regard to ownership of telecommunication facilities, about two-third of rural people have their own mobile phones and about half of them have fixed phones at their homes/work place. About 14 percent of rural people have WLL, personal computers and internet connection at their homes/work place. Ownership of other telecommunication services is negligible.

There is great potential in rural Pakistan to make good use of telecommunication services as rural people are well aware of the benefits of various telecommunication services. Mobile phones and internet, as revealed in latest TEACH Telecommunication Survey 2008.

Around 60 percent of rural people believe that fixed and mobile telephones strengthen their cultural values, social ties and family cohesion. One-third of rural people have same views about internet. More than 70 percent people perceive that access to telephones, whether fixed or mobile, enhances general interaction among people of the society. About half of this percentage that is 35 percent of rural people think that access to internet enhances general interaction among various segments of society. Figure-3.16 explains this situation more clearly.

Figure-3.16
Perceived Benefits of Telecommunication Services in Rural Areas



More than 60 percent rural people expect positive benefits of both fixed and mobile phones in acceleration of their business and commercial activities. The corresponding figure for internet is 34 percent. Around one-half of respondents acknowledged gainful role of telephone in finding suitable jobs and in managing their farms more effectively. More than one-fourth of respondents understood that use of internet leads to employment generation and better management of their farms. More than 40 percent respondents realized that access to fixed and mobile telephones augments their savings as they can easily contact financial institutions to find out where they should place their savings for better return. The corresponding figure for the use of Internet is 25.7 percent. Similarly, little less than half of the people interviewed in the survey comprehended fruitful outcomes of the usage of both fixed and mobile telephones in health/medical care and education. Around one-third of interviewees had similar view about the usage of

internet. Roughly two out of every people acknowledged that fixed and mobile telephones and internet are goods source to keep oneself abreast of general and sport news.

3.5.2 Case studies

The key role of telecommunication services, particularly of mobile phones in saving transaction costs is illustrated by a story of a milkman who lives in a village and sells milk in a nearby town.

Case Study-3.1
Increase in Income by Using Mobile phone

There is a cattle farm situated in a village, Raheem Pur, near Sialkot. The owner of the cattle farm, Muhammad Asif has been using Mobile for last five years.

Prior to mobile usage, apart from his regular customers he had to travel long distances to sell milk to milk shops, bakers and hotels. On certain occasions, it happened that the respective shop was closed. His trip was wasted and the milk lost its quality for healthy usage. His customers used to call at his relative's telephone number to place the order for sale of milk. On visiting his relatives in the evening, he was finding the orders but it was too late. Now people call him directly and place the order. In case of demand exceeding to supply the milk at the time of need, he calls his fellow farmers and arranges milk to fulfil the demand. With the monthly expenditure of Rs.500 to Rs.600 on Mobile phone, his monthly sales of milk has reached Rs.1,20,000, from which he is able to earn profit of Rs.20,000.

Source; TEACH Research

The story of milk farmer is not unique. Similar sort of impacts from better telecommunication infrastructure are noticed in case of many handy persons like carpenters, masons, painters, plumbers, electricians, sweepers, and machine operators in both rural and urban areas. Diversity of occupations is required to relieve unemployment in agriculture sector and to ensure higher standard of living for rural population. Occupational choices are increased by providing telecommunication services to rural labour force. Unlike agriculture, in other businesses, fast and frequent communication is required by customers and suppliers.

Case Study-3.2
Income by Ordering Using Mobile Phone

There are two fruit shops, Zaid Fruit Shop and Bakr Fruit Shop, at two different locations in a small rural town. On Sunday afternoon, the whole fruit supply of Zaid Fruit Shop is bought out by a single customer for some family festival. On the other hand, on the same Sunday only few customers come to Bakar Fruit Shop until. Zaid called up Bakar to transport half of his fruit supply to Zaid Fruit Shop. Consequently the whole fruit supply of both shops was gone by the end of day.

Had Zaid not called Bakar on that day due to having no access to telecommunication services, then regular customers of Zaid Fruit Shop would have been disappointed while the owner of Bakar Fruit Shop would have suffered some financial loss. Usage of telephone made the fruit market work in an orderly manner by saving customers of former shop from possible disappointment of finding no fruit in the neighbourhood and by saving owner of the latter shop from possible financial loss due to lack of sale of fruit.

Source; TEACH Research

Awareness about market conditions is crucial for the success of any business. Supply and demand pressures develop due to unexpected changes in market environment. In such a situation, coordination of concerned businessmen in the same field may help them maintain an orderly market that benefits both sellers and buyers. The case study 3.2 sheds light on the importance of keeping track of changing market condition.

3.6 Government and other initiatives

For development of rural areas, MTDF 2005-10 identifies the following rural development schemes:

- Improving and expanding rural infrastructure including roads, education, health facilities, electricity and telecommunication services;
- Development of non farm sector like dairy products, livestock and agro based industry;
- Introducing new sources of income like small medium enterprises (SMEs);
- Development of rural financial markets;
- Development of human capital through on-job training and improvement of skills.

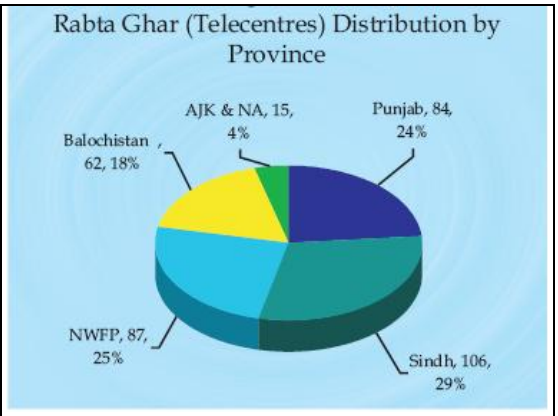
In spite of appreciable expansion in telecommunication services, the current teledensity in rural areas of Pakistan is very low. To bridge this digital gap in Pakistan, PTA is taking steps to increase access of telecommunication services in rural areas that are self sustaining, cost effective and best suited to the social and environmental needs of the local community. For this purpose, PTA and UNDP have signed MoU for establishment of telecentres in rural areas for improvement of rural communication. Several banks have been contacted to make credit lines/micro finance available for providing loans to people in the rural areas for the establishment of PCOs & telecentres. Under the National Bank of Pakistan's *"President's Rozgar Scheme",* soft loans would be provided for the establishment of telecentres in rural areas. Further, Zarai Taraqiati Bank Limited (ZTBL) and First Women Bank Limited are also finalizing a product that will facilitate entrepreneurs in rural areas. PTA is also working with Pakistan Post to establish PCOs in post offices located in rural areas through Card Payphone (CPP) operators. PTA has launched its Rural Telephony Project on February 1, 2007. The project entailed the establishment of Rabta Ghar (Telecentres) in rural areas all over Pakistan. Initially 354 Rabta Ghars have been planned to be installed throughout the country. Distribution of the approved Rabta Ghars by Provinces shows that 29% will be established in the province of Sindh while 25% are being established in the Province of NWFP. M/S Genuine Intel Dealer (GID) appointed as vendors has started installation and commissioning of these Rabta Ghars w.e.f 27th October 2007. Each Rabta Ghar is being equipped with a PC, one Wireless PCO, one internet enabled wireless set, printer, scanner, copier and fax (4 in 1 machine).

Apart from above, A Universal Service Fund (USF) has also been created to bring the focus of telecommunication operators towards rural population, which has remained unserved. Uptill now, USF has awarded contracts to provide services in Malakand, Sukkur, DG Khan, Pishin, Mansehra and Dadu while several projects are in pipeline. PTCL will provide basic telephony and data services to the population in the un-served areas of Balochistan districts of Pishin, Killa Abdullah and Quetta. USF has planned to extend the fibre optic connectivity to the un-served tehsil headquarters in Pakistan for meeting the growing requirements of voice, data and video in these areas. Figure 3.17 shows the status of telecentres and their province wise distribution.

Figure-3.17
Telecentres Province wise

Status of Telecentres Deployment

Province	Approved RGs	Deployed	Under Process
Punjab	84	64	20
Sindh	106	81	25
NWFP	87	75	12
Baluchistan	62	51	11
AJK & NA	15	03	12
Total	354	274	80



Telenor[14] has signed an agreement with PTCL to enable backhaul of GSM traffic via satellite technology branded by PTCL as Skylink. It indicates that Telenor is planning to increase its outreach in rural areas. Perhaps Telenor's experience in Bangladesh has given the company confidence and experience of working with rural population.

3.7 Concluding Remarks

In view of the beneficial usages of telecommunication services discussed earlier, it can be safely concluded that generous provision of telecommunication services in rural areas will not only stop brain drain from the country but will also revert back the increasing trend of urbanization which results into many problems like traffic jams, horrible noise, unhygienic living in urban slums and smoky atmosphere etc.

[14] Telenor Plans Expansion To Rural Areas. Partners With PTCL For Skylink Satellite Services , Published by Babar Bhatti on November 12, 2008 04:00 pm under Emerging Markets Telecom, Infrastructure, Telecommunications, Telenor, Wireless Via Business Recorder.

Chapter-4

Telecommunication and Small and Medium Enterprises

4.1 Introduction

Small and Medium Enterprises (SMEs) are defined as entities whose employees and/or turnover falls below certain limits. The abbreviation SME is used in the publications of World Trade Organization.(WTO). The term small and medium sized businesses (SMBs) is predominantly used in the USA. In South Africa the term SMME, for Small, Medium and Micro Enterprises, is used whereas, elsewhere in Africa, MSME is used, for Micro, Small and Medium Enterprises. Size thresholds of the SMEs vary from country to country.

Before the formation of European Union (EU) the Member States definition of what constitutes an SME had different between countries. For example in Germany limit was 250 employees, while, in Belgium it was 100. Currently the EU categorizes companies upto 50 employees as "small", and those upto 250 as "medium". In the United States, small business is often referred to those entities which have less than 100 employees, while medium-sized business is referred to entities with fewer than 500 employees. Both US and EU generally use the same threshold of less than 10 employees for small offices (SOHO).

The definition of what constitutes an SME[15] varies widely among APEC (Asia Pacific Economic Cooperation) member economies. The APEC definition of SME was the threshold of employees up to 500. Table 4.1[16] provides definitions of the term “small business” by countries and by type. Most definitions of SMEs are expressed in terms of number of employees. Some countries define SMEs in terms of value of fixed assets and/or sales.

Table-4.1
Profile of SMEs in APEC Economies 1998

S/N	Country	Sector	Size of Employment or Sales or Assets
1.	Australia	Services	<20
		Manufacturing	<100
2.	Brunei Darussalam	Services or Manufacturing	<100
3.	Canada	Services	<50
		Manufacturing	<100
4.	Chile	Small	Annual Sales of USD 75,000 – 780,000
5.	China	Small	50 - 100
6.	Hong Kong	Non Manufacturing	<50
		Manufacturing	<100

[15]SME Electronic Commerce Study (TEL05/97T) September 24, 1999
[16]APEC (Asia Pacific Economic Cooperation) TEL Project-EC Best Practice for SME's in the APEC Region-Prepared by AOEMA (Asia Oceania Electronic Marketplace Association) -31 August 2001-APEC & AOEMA

S/N	Country	Sector	Size of Employment or Sales or Assets
7.	Indonesia	Small	Annual Sales of < USD 100,000
8.	Japan	Services	<5
		Manufacturing	<20
9.	Korea	Small and Medium Services	<20
		Manufacturing	<300
10.	Malaysia	Full Time	<150
11.	Mexico	Micro	1 - 15
		Small	16 - 100
12.	New Zealand	Small and Medium	<50
13.	Peru	Small	Annual Sales < USD 17 Million
14.	Philippines	Small	10 - 99
15.	PNG	Manufacturing and Services	5 - 10
		Very Small/ Small	11 - 20
16.	Russia	Small	1 - 249
17.	Singapore	Services	<200 Employee
		Manufacturing	Fixed Assets of <USD 15 Million
18.	Chinese Taipei	Services	<50
		Manufacturing	<200
19.	Thailand	Small	<50
20.	United States	Non Manufacturing	Sales < USD 5 Million
		Manufacturing	<500
21.	Vietnam	Small	<30

In Pakistan[17] SMEs are defined as firms with respect to employment size, paid capital or value of annual sales. The cut-off limits are (i), (ii) and (iii) given in the Table-4.2.

Table-4.2
SMEs in Pakistan

Employment Size	Paid Up Capital	Annual Sales
(i)	(ii)	(iii)
Upto 250	Upto Rs. 25 Million	Upto Rs. 250 Million

With different ways of defining SMEs, one can not easily arrive at the quantitative importance of contribution made by the SME sector to the economy.

There are also a lot of variations of definitions of SME in South Asia. In India, the Micro and Small Enterprises (MSEs) sector plays a pivotal role in the overall industrial economy of the country. It is estimated that the sector accounts for about 39% of the manufacturing output and around 33% of the total export of the country.

In most economies, SME enterprises are a dominant proportion of total number of enterprises. In the EU, SMEs comprise approximately 99% of all firms. Globally, SMEs account for 99% of business firms and 40% to 50% of total GDP.

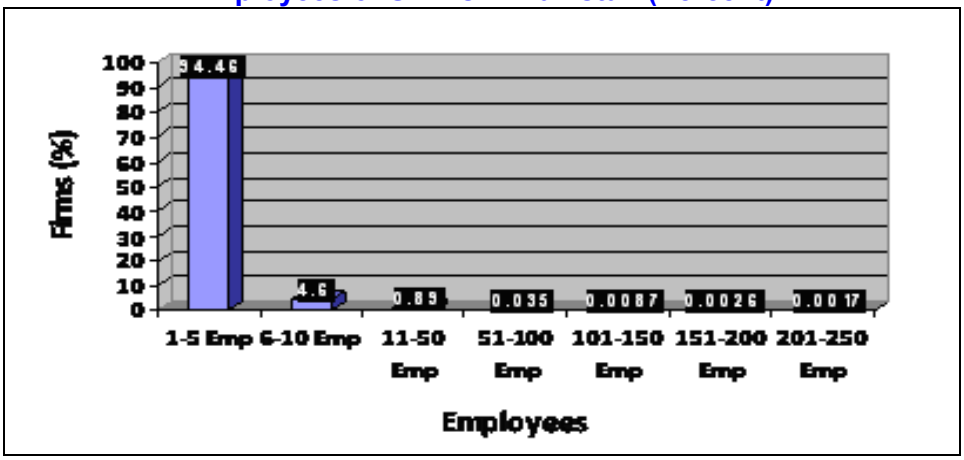
[17] **SME Policy 2007 -** SMEDA

In Pakistan, percentage of firms with respect to number of employees is given in the Table-4.3. Figure-4.1 shows the same information diagrammatically.

Table-4.3
Size of the SMEs with respect to Employees

Employees	1-5	6-10	11-50	51-100	101-150	151-200	201-250
Firms (%)	94.46	4.60	0.89	0.035	0.0087	0.0026	0.0017

Figure-4.1
Employees of SME's in Pakistan (Percent)



4.2 The Organizations facilitating the SMEs globally and in Pakistan

4.2.1 The United Nations Industrial Development Organization (UNIDO)

UNIDO was established in 1966 and became a specialized agency in the United Nations system in 1985 with headquarters in Vienna, Austria. As a specialized agency, UNIDO has its own constitution, policy making organs, executive head and a regular budget. As of 2008, 172 states are members of UNIDO. The organization employs a staff of 650 at Headquarters and in field offices in about 80 countries it draws on the services of some 2,800 international and national experts (approx. 50% from developing countries) annually, who work in different project assignments throughout the world.

UNIDO mobilizes knowledge, skills, information and technology to promote productive employment, a competitive economy and a sound environment. Further, the Organization enhances cooperation at global, regional, national and

sectoral levels. The main focus is on promoting growth in the small and medium enterprise sector. The organization:[18]

- assists developing countries in the formulation of development, institutional, scientific and technological policies and programs in the field of industrial development;
- analyzes trends, disseminates information and coordinates activities in the industrial development;
- acts as a forum for consultations and negotiations directed towards the industrialization of developing countries; and
- provides technical cooperation to developing countries for implementing their development plans for sustainable industrialization in their public, cooperative and private sectors.

UNIDO works largely with governments, business associations and individual companies mainly in developing countries.

UNIDO[19] has sharpened its technical cooperation activities by focusing on three themes, which directly respond to international development priorities:

- UNIDO attempts to address Millennium Development Goal1 (MDG1) with respect to poverty reduction by focusing on enabling the poor to earn a living, rather than providing help to deal with the symptoms of poverty. As such, UNIDO focuses on micro, small and medium scale enterprises development; rural and agro-industrial development; and role of women in development.
- UNIDO combines building up the technical infrastructure required to participate in international trade (i.e. standards, quality, accreditation and certification) while strengthening key export sectors that require support services in strengthening/upgrading productive and export capacities .
- UNIDO assists countries in the implementation of activities related to the multilateral environmental agreements; the promotion of energy efficiency; and the promotion of sustainable production and consumption practices.

4.2.2 The International Federation for Alternative Trade (IFAT)

IFAT is a collective effort to empower the agricultural sector of developing countries. It is composed of 100 organizations (including 70 organizations in developing countries) in 42 countries. Members of the organization collectively market about $200-400 million annually in handicrafts and agricultural products from lower income countries. In addition, IFAT provides assistance to developing country producers in terms of logistical support, quality control, packing and export.

[18] Wikipedia
[19] UNIDO Progress Report as of end October 2007

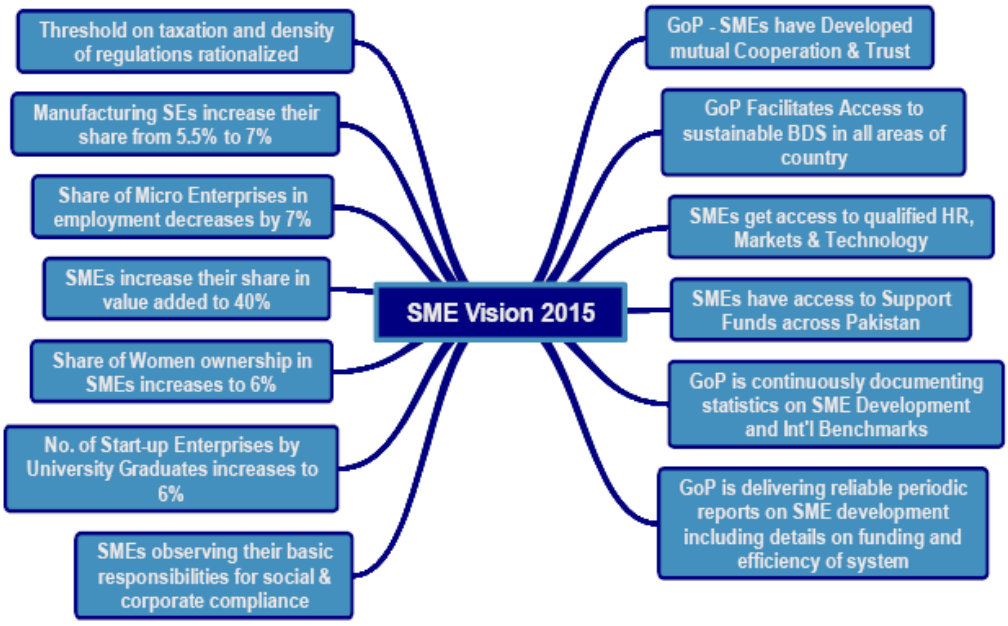
4.2.3 The Small and Medium Enterprise Development Authority (SMEDA)

Government of Pakistan initiated small industries promotion through formation of the West Pakistan Small Industries Corporation. The Corporation created an impact in its early years. With the breakup of one unit, the successor organization in the four provinces did not perform well in support of small industries. Small and Medium Enterprise Development Authority **(SMEDA)** established in October 1998**,** is now the premier institution of the Government of Pakistan under Ministry of Industries and Production with a mandate, to assist Small & Medium Enterprises (SMEs). SMEDA is an SME policy-advisory body for the government of Pakistan. It also facilitates different stakeholders in addressing their SME development agendas as given in SME Policy 2007[20].

4.2.3.1 SME Development Vision[21]

SME led economic growth resulting in poverty reduction, creation of jobs and unleashing the entrepreneurial potential of the people of Pakistan is the Vision for SME. Figure-4.2 shows different elements of the vision statements.

Figure-4.2
SME Development Vision 2015



4.2.3.2 SME Policy Statement

The SME policy statement in the vision documents is as follows:

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[20] Section II SME Policy: Objectives, Scope and Principles-SME Policy 2007- SMEDA - Ministry of Industries, Production & Special Initiatives, Government of Pakistan

[21] Section III SME Policy Recommendations-SME Policy 2007- SMEDA - Ministry of Industries, Production & Special Initiatives, Government of Pakistan

"To create globally competitive SMEs by creating a hassle free business environment, ensuring provision of modern infrastructure & institutional support structures for access to resources & services. The Government shall take measures for promotion of women entrepreneurship, cluster development and also focus on neglected/untapped sectors of the economy. Strengthening Industry-Academia linkages shall also be a key feature of the Policy"[22]

Small and Medium Enterprises (SMEs) have a significant role in development of Pakistan and are important contributor to country's economy. There are about 3.2 million small business enterprises which contribute about 30% to the GDP. The potential of the SME sector in the country's economy is clearly much greater. Poverty reduction. In the economic revival plan and poverty reduction SME's are considered as one of the pillars by Government of Pakistan.

Like other developing countries, a major problem for SMEs in Pakistan is lack of ability to arrange financing from financial institutions. Entrepreneurs of small and medium enterprise lack resources to make important decisions concerning not only the selection of an appropriate financial institution but also the manner in which they approach it for financial assistance. Most SMEs are not aware of the different incentive packages given by banking sector. Telecommunication can play a role to remedy this deficiency.

4.3 Technologies in use of SMEs internationally

4.3.1 Developments in China

There are two main categories of support facilities proved by the telecommunication sector in support of SME's. These are (1) call centres and (2) facilities of video conferences[23]. Such facilities have expanded in China. The call centres solutions include telecommunication and banking, securities, insurance, computer, consumer appliance, manufacturing, tourism, logistics, retail, and e-commerce. CCID Consulting forecasts a growth rate of 23% in spending on the CTI equipment in the call centres. For video conferencing, China's enterprises, large and small, are realizing the benefits of real-time communications and the resulting efficiencies. About 11 million SMEs in China are using video conferencing facilities.

The telecommunication restructuring in China shown in Figure-4.3 is expected to enable better facilitation of telecommunication sector in support of SME development of industry solutions. One of the goals of the restructuring of telecommunication sector is to foster 3G development in China. 3G technology

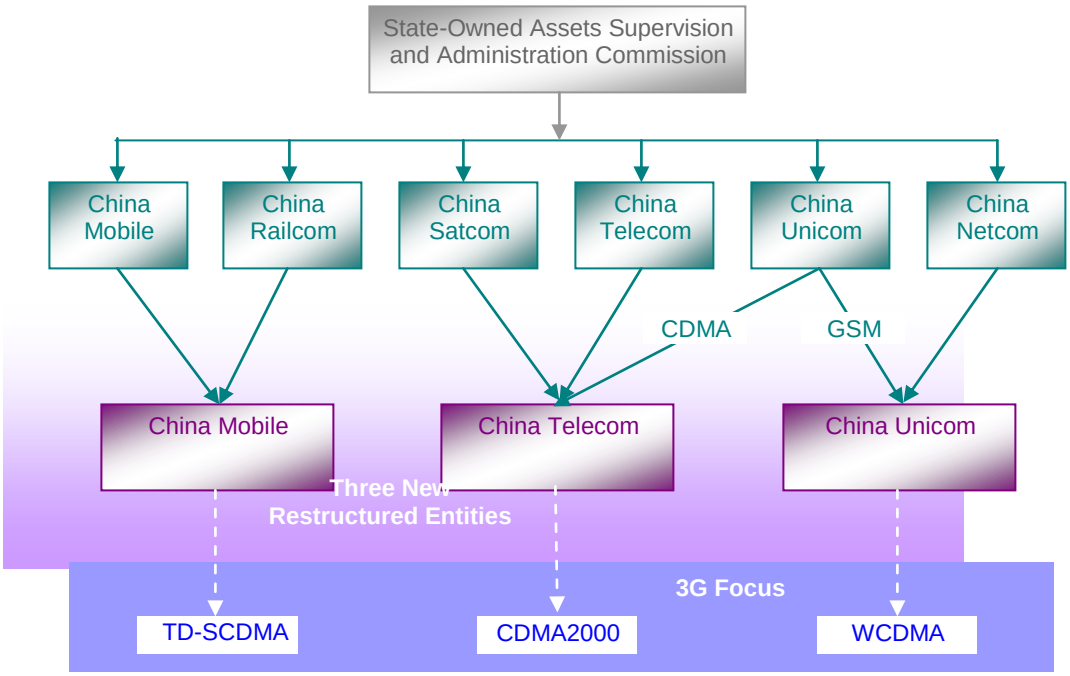
[22] Section III SME Policy Recommendations-SME Policy 2007- SMEDA - Ministry of Industries, Production & Special Initiatives, Government of Pakistan.

[23] CCID(China Centre for Information Industry Development) Consulting - Communications & Networks - **Sustainable Growth For China's Telecom Industry Solutions** dated September 3, 2008

offers larger capacity and better quality of communications than 2G and 2.5G. The 3G version enables users to realize seamless voice, data, and multimedia outcomes In case of businesses, it is possible to have mobile offices, with long distance access and control. The ultimate goal of China's telecommunication restructuring is to have the three reorganized entities of China Mobile, China Telecom, and China Unicom, each having nationwide resources, full service capabilities, strong competitiveness, and relatively equal scale and strength.

The desired goal is to have a strong, vibrant, and competitive Telecommunication industry in China.

Figure-4.3
Telecom restructuring in China



Source: CCID Consulting, May 2008- Communications & Networks - China's Telecom Restructuring: A Preliminary Assessment - August 20, 2008- The Future: More Changes To Come

4.3.2 Use of ICT in Canada[24]

The adoption of information and communication technologies (ICTs) has become a key contributing factor in productivity growth. Use of ICT by Canadian firms has contributed greatly to productivity growth by promoting change and innovation in business practices as ICT's have strong enabling effects. SMEs in Canada have reported average revenue gains of 8% using ICT.

[24] The Canadian Chamber Of Commerce- Telecommunications Priorities for Canada's SMEs- Telecommunications Policy Review Forum- October 24, 2005

The Canadian Chamber of Commerce (CCC) recommends promotion of broadband services; greater reliance on private sector investments to expand rollout of broadband networks; and active support of federal government in increasing broadband coverage for Canadians accessing broadband.

4.3.3 The use of IT in India[25]

The share of Indian Small and Medium Enterprises, in total expenditure on ICTs has been growing rapidly over the past few years. The growth in SMB IT spending is expected to continue growing at 24 percent per year. This growth rate is the fastest amongst all BRIC countries (BRICs is an acronym that refers to the fast growing developing economies of Brazil, Russia, India, and China.[26]). Russia, China and Brazil are experiencing the growth rates in ICT spending 22.9 percent, 20.4 percent and 19.4 percent respectively.

The Microsoft-AMI Partners report on IT adoption in Indian SMEs shows that half of the 250 surveyed businesses cited the need to manage rapid growth as the key reason for adopting IT. Another 41 percent stated that use of IT helped them improve efficiency further high, 39 percent had adopted technology to meet the need for regular interaction with large Indian or international customers.

4.4 Emerging Technologies for SMEs

4.4.1 The IP Multimedia Subsystem (IMS)

IMS[27] is an architecture that provides a set of standard interfaces and elements, creating a good framework on the service provider's network to allow application developers and systems integrators to quickly develop and offer enterprise solutions. It is user-centric, access agnostic, intrinsically mobile, and offers a good way for telcos to deliver unified communication and FMC solutions to enterprises. In addition, rich multimedia services are possible across both next-gen packet-switched and traditional circuit-switched networks, including mobility. Co-existence of IMS with web services plays an important role. One of the key drivers for future IMS demand from the enterprises is the increasing popularity of hosted and managed services among SMEs. Due to its native convergence features, the ability to support advanced communication services and open standard nature, IMS is of particular interest to the enterprise market.

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[25] newsgaze-simply simple, Indian SMEs lead IT spend growth in BRIC -February 20, 2008

[26] Wikipedia

[27] IMS offers new approach for enterprise segment - By Claudio Castelli/Ovum - **June 10, 2008 -** Telecom Asia

4.4.2 Telecommunication Bundles[28]

SME Businesses are more reliant on telecommunications technology due to bundling of various telecommunication products into a single packaged service. Such bundling is known as the "triple play," which typically incorporates video, voice and data. Recently, wireless voice service has been added to create a quadruple combination and bundled services have become quite popular with SMEs.

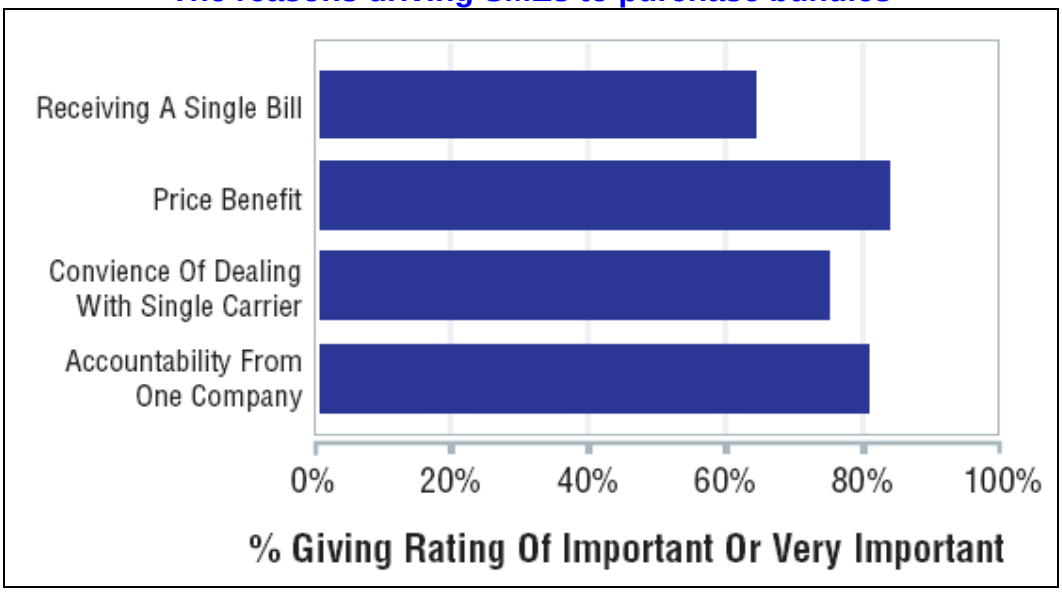
There seem four primary reasons to purchase a telecommunication bundle: lower price, greater accountability, increased convenience, and unified billing. Pricing is the driving factor behind most SMEs interest in telecommunication bundles. It is believed that emerging unified messaging and communications technologies will necessitate a more complex telecommunication environment that might best be delivered by a suite of bundled services. Features such as fixed/ mobile phone convergence and presence-based communications services will drive greater adoption of bundling because the interdependencies between many of these services will make them hard to price individually.

The current offering of voice and data packages is just the beginning. In future, SMEs would like to have three more value-added services i.e. Web and e-mail hosting, managed security services, and applications delivered via SaaS (software as a service).

A combination of hosted phone system software, an IP network optimized for voice, and expert service would eliminate the need for small businesses to own a phone system and allow the transparent addition of features without the need to modify onsite equipment. It will also ensure the voice quality adequate for the Internet needs of most customers. In a very short period of time, businesses with distributed and mobile workforces will increasingly turn to telecommunication bundles with wireless voice and data components. As more advanced features like unified messaging; presence services; and fixed / mobile convergence phones, which can automatically switch between Wi-Fi / VoIP modes when in the office to a cellular network when on the road become available, more extensive service bundles will be required to gain the added functionality. The Figure-4.4 indicates the reasons driving SMEs to purchase bundles:

[28] SOURCE: Processor Products - ***General Information*** *by Kurt Marko - September 7, 2007 • Vol.29 Issue 36 - Page(s) 25 in print issue* Are Packages Of Voice & Data Services A Cost-Effective Convenience Or Potential Straightjacket For SMEs? **Sandhills Publishing Company 2008**

Figure-4.4
The reasons driving SMEs to purchase bundles



The SMB Market," Forrester Research Report By Michele Pelino, June 6, 2007
Source: "Telecom Bundles Are Required, but They Are Not Enough To Address

4.4.3 Gigabit Passive Optical Network (G-PON)

ITU, together with Telcordia, have collaborated to organize a multi-company interoperability demonstration featuring gigabit passive optical network (G-PON) equipment built according to the ITU-T G.984 series of Recommendations (standards), including the recently consented G-PON reach extender (ITU-T G.984.6). PON technology is used in the local loop environment to cost effectively connect residential and small and medium enterprises (SME) end users premises in an all-fiber network[29] to provide Triple-play interoperability through a bend-insensitive fiber (built to ITU-T G.657 specs) based optical distribution network over which the 2488 Mbps/1244 Mbps (downstream/upstream) G-PON systems will be operating.

With PONs, signals are carried by lasers and sent to their destination without the need for active electronics in the outside plant of the telecommunications network. Carriers can realize significant savings with fiber sharing in the local loop, equipment sharing in the central office and by eliminating the dependence on expensive active network elements.

ITU-T's G.984 series Recommendations is the latest generation of PON technology. With gigabit capacity today and the ability to transparently support future capacity upgrades through ITU-T G.984.5 compatible overlays, ITU-T G.984-based systems should more than satisfy foreseeable customer demands. G-PON (ITU-T G.984.6) reach extender solutions allow operation over as much as 60 km of fiber, with split ratios as high as 1x128.

[29] ITU-T Newslog - Access Wednesday, June 11, 2008

4.5 The Way Forward

Strategies that may be employed for obtaining maximum advantage from ICTs by SME's are outlined below:

- Use of low-cost 'Web services' technology might prove beneficial by easing integration with existing supply-chains.
- The use of low-cost collaboration design technologies can also be useful. In the future, large and small supply-chain partners alike might adopt tools that are easy-to-use.
- Use of open standards, based on XML, for business messaging should be adopted wherever possible. The complications that arise from interoperation between proprietary software across organizations are important factors that need to be taken into account.
- Integration solutions using open-source (i.e. public domain) integration technology are now possible. The costs and benefits for restricted budget and, restricted functionality integration scenarios need to be investigated.
- There is a need to leverage the existing systems. In general, vendors provide limited integration across the enterprises. Businesses should use existing infrastructure and build an integration layer on top of it. Using wrapper technology, or interfaces using Web services, will insulate the legacy system and ultimately make the solution more flexible.
- The value of traditional message-based integration should not be forgotten. This provides a simple solution for distributed transactions. Using distributed components and messaging is another feasible approach for achieving real-time business integration.

The Information Society has the potential to revolutionize all aspects of business activities, from innovation and product development, procurement and production, to logistics and information coordination and dissemination. Today, more than ever before, a small enterprise can use new technologies to respond quickly to changing consumer patterns, customize goods and services to meet local demand, manage supply processes and inventories, and monitor production costs and quality control.

4.6 E-commerce

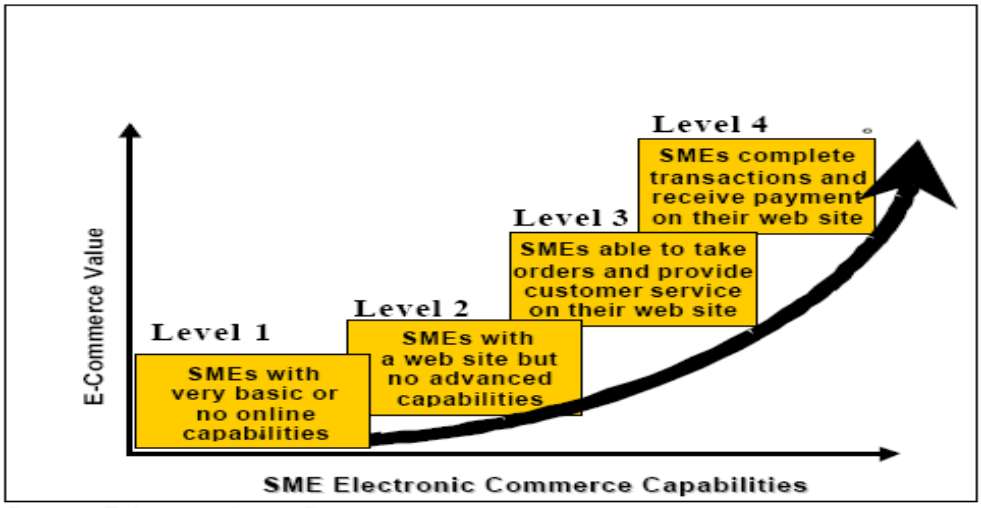
For SMEs in developing countries, e-commerce poses the advantages of reduced information search costs and transactions costs (i.e., improving efficiency of operations-reducing time for payment, credit processing, and the like). Information on the following is most valuable to SMEs; customers and markets, product design, process technology and financing source and terms. The Internet and other ICTs facilitate access to this information. In addition, the Internet allows automatic packaging and distribution of information (including customized information) to specific target groups.

However, most SMEs in developing countries cater to local markets. Such firms rely heavily on local content and information. For this reason, there is a need

to substantially increase the amount and quality of local content (including local language content) on the Internet to make it useful especially to low-income entrepreneurs.

APEC has employed the categorization shown in the Figure-.4.5 below to examine the differences in perception between firms with different levels of e-commerce capability. These capability levels recognize that firms typically evolve through successive stages of e-commerce development, confronting different issues as they progress to higher levels of e-commerce capability and activity.

Figure-4.5
Four Levels of SME Electronic Commerce Capabilities



Source: PricewaterhouseCoopers

4.6.1 Opportunities and Benefits of Electronic Commerce

The potential opportunities and benefits of electronic commerce for SMEs include strengthening customer relationships, reaching new markets, optimizing business processes, reducing costs, improving business knowledge, attracting investment and creating new products and services. Raising the awareness and understanding of these and other opportunities and benefits is an important means of increasing the uptake and use of electronic commerce among SMEs. Growing the awareness and understanding of the benefits and uses of electronic commerce among SMEs can positively influence their desire and interest in adopting e-commerce in their business practice.

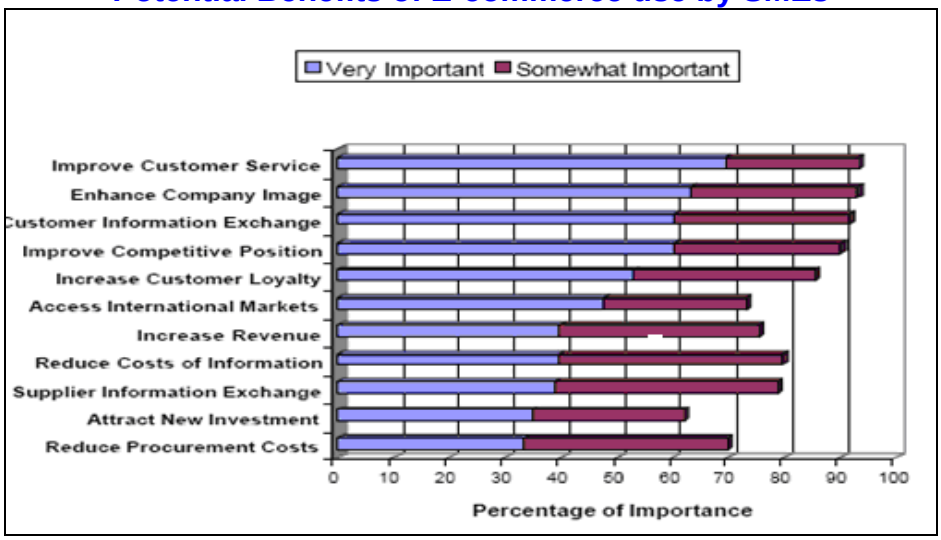
In Singapore, SME electronic commerce is clearly being driven by the government. As part of its vision to develop Singapore into an “intelligent island”, the government has developed an electronic commerce master plan and a series of initiatives to take it forward. These include the establishment of a “cyber law” framework and provision of grants aimed at encouraging e-commerce uptake by local companies, as well as tax incentives for foreign companies to use Singapore as their base for their e-commerce activities in Asia. Further, government agencies are making a coordinated effort to make Singaporeans realize its vision. Government suppliers are required to submit electronic bids for government

contracts. Households are being linked to the Singapore ONE broadband network and measures are being introduced to familiarize consumers with the use of plastic money.

By making electronic commerce a priority, governments are actively encouraging the diffusion of electronic commerce as a way to improve firm competitiveness and access to new markets.

The adoption of electronic commerce by SMEs depends largely on their perception of the opportunities and benefits afforded by electronic commerce and the relevance of these opportunities to their business. Figure 4.6 indicates the perceived benefits of electronic commerce use by SMEs:

Figure-4.6
Potential Benefits of E-commerce use by SMEs



The Priorities of perceived benefits of electronic commerce are mapped below:

Table-4.4
The Priorities of Perceived Benefits of E-commerce

	Firms with Lower Capabilities	Firms with Higher Capabilities
Higher-GNP Economies	• Improve Customer Service • Enhance Company Image • Competitive Position • Better Info Exchange with Customers • Enhance Customer Loyalty	• Improve Customer Service • Enhance Company Image • Better Info Exchange with Customers • Competitive Position • Access International Markets
Lower-GNP Economies	• Improve Customer Service • Better Info Exchange with Customers • Competitive Position • Enhance Company Image • Enhance Customer Loyalty	• Better Info Exchange with Customers • Improve Customer Service • Competitive Position • Enhance Company Image • Access International Markets

E-commerce enables SMEs to offer 24-hours a day information to customers through their Internet web site and respond more quickly to customer inquiries and requests for information by email. E-commerce allows SMEs to be more targeted in their customer communications and realize more cost reductions in their advertising and product promotion. They value the ability to standardize customer information digitally and update it efficiently at lower cost. E-commerce enables SMEs to gather and compile better market intelligence on their customers, suppliers and competitors through Internet research and better develop and update customer databases, including online databases. By providing a higher quality of service and better information exchange with customers, e-commerce offers important benefits to SMEs in improving longer-term customer loyalty and retention. E-commerce can enable firms to develop a presence and compete in markets that were previously untapped by SMEs.

Using e-commerce to reach international markets is important as SMEs are key to economic growth through enhanced productivity. Enhancing the role and participation of SMEs in the global marketplace through electronic commerce is of critical importance for which no stone should be left unturned.

4.6.2 Issues in E-Commerce

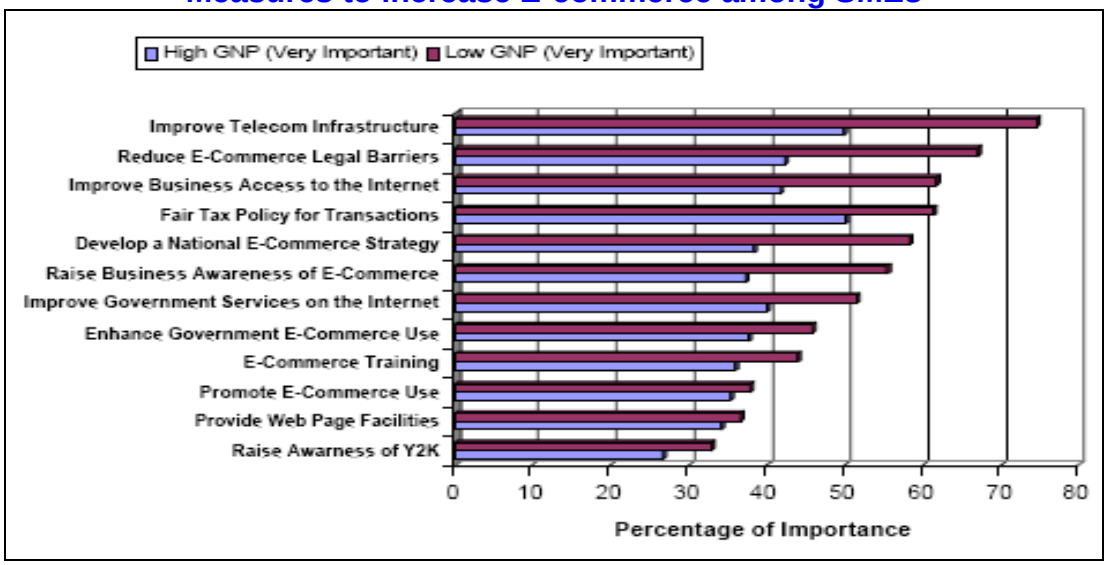
- **Access**: the most fundamental obstacle to electronic commerce is inability to access and use the network infrastructure (for some SMEs, cost of access is prohibitive while for others the issue is a lack of infrastructure quality and its reliability
- **Knowledge and skills**: majority of SMEs have insufficient understanding of the online environment to realize as to how they can benefit from its finances. For firms which may have the knowledge of the potential benefits, lack of skills and/or financial resources may contain them to effectively benefit from the E-Commerce. A minority of firms may not be aware of reliable business models.
- **Trust and confidence**: most SMEs find it hard to trust the online environment. When such firms don't see their government making electronic commerce a national priority and find that their business partners are not yet online, then it makes them wonder why they should get involved in E-Commerce.
- **Language**: the dominance of English-only websites is sometimes a` barrier for firm whom employees are not good at the use of English.
- **Security**: some SMEs have expressed concern over the security of electronic transactions.
- **Legislation**: SMEs often complain about the lack of globally consistent legislation that is conducive to electronic commerce.
- **Financial**: SMEs need access to safe and reliable payment systems if they are to successfully conduct online business. Many SME's consider that it is government's role to solve the problems that hold them back from implementing electronic commerce. There are, however, a few small companies who have been successful in finding ways around the

obstacles and have developed an electronic strategy. There are many ways for companies to cost-effectively begin using electronic commerce.

4.6.3 Measures to Increase E-Commerce Use among SMEs

Figure-4.7 shows the measures to be taken to increase the commerce use among SMEs.

Figure-4.7
Measures to increase E-commerce among SMEs



Source: AOEMA (Asia Oceania Electronic Marketplace Association)

4.7 Access to resources and services

It is now widely recognized that SMEs benefit from taking advantage of telecommunication services. In the initial years only fixed line telephony was available. However, access was a major problem. After availability of mobile / wireless services, Internet and broadband services, triple/ quadruple play, opportunities to carry out business by SMEs smoothly have been significantly increased.

For developing countries, usage of electronic commerce is a new experience for most of the business enterprises. There are certain issues which are to be informed like, getting know-how of technical terms, initiate electronic commerce strategies, consumer privacy and its protection, intellectual property rights and transmission of electronic signals. All these issues are of immense usage for businesses which are looking forward to expand to foreign market and entrepreneurs which have a sustainable structure and are seeking to expand their business through electronic commerce. In this context telecommunications services can play a useful role for small and medium sized exporters who are planning to sell their products to foreign markets.

4.7.1 Access to Finance

Online banking saves time in money transactions. ATM's have provided easy access to money round the clock. telecommunications networking not only

has increased the banks' efficiency but it also has improved the technical/ operational capabilities. SMEs can use the websites to explore credit lines from different sources.

4.7.2 Access to Market

Telecommunications has the ability to integrate the SMEs with the markets. Knowledge and developments taking place in use of e-commerce for trading have made access to market by SME's easier than before the use of e-commerce.

4.7.3 Business Environment

Telecommunications also helps in creating favourable business environments for SMEs to grow at reduced cost. Interaction with civil authorities and government agencies improves as facilities like phones, SMS & e-mails provide ready contact at a nominal cost. Travel needs are also reduced due to availability of highly sophisticated telecommunication technologies.

4.7.4 Human Resource Development

Telecommunications play a significant role in human resource development by facilitating acquisition of knowledge and skills. Internet and broadband services are facilitating promotion of such acquisition by economic agents engaged in SME sector.

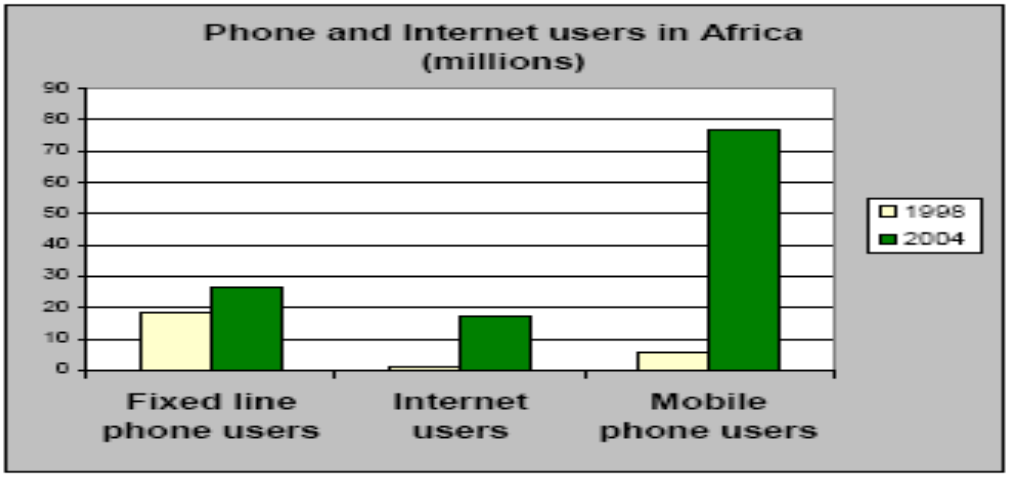
4.8 Use of telecommunication by SMEs in developing countries

4.8.1 Use of Mobile Phone

One of the main constraints to the competitiveness and growth of SMEs from developing countries is the lack of easy and affordable access to relevant business information. They have generally been by-passed by the communication revolution due to poor telecommunication infrastructure, especially in rural areas.

Mobile phones, however, open untapped opportunities and have an especially dramatic impact in developing countries. Mobile phones substitute for fixed connections, reduce transaction costs, increase mobility, broaden trade networks, and facilitate searches for employment. This wireless communication medium, which has spread at an exponential rate in developing countries, allows SMEs to overcome disadvantages and puts technology to work for their development. Growth of mobile phones in Africa by 2004 as compared to availability of the same in 1998 is shown in the Figure-4.8.

Figure-4.8
Phone and Internet used in Africa (Millions)



UNIDO[30] is utilizing mobile telephony to take the services of the Business Information Centers out into the surrounding community enabling women entrepreneurs to build a business as 'village phone operators'.

In China[31] only one-quarter of SMEs' telecoms budget is spent on mobile voice and data, compared to the global average of about one-third. Although SME mobility has not taken off, China is one of the few markets where ordinary mobile phones and traditional telephony services such as DECT are still expected to grow substantially.

Within the framework of the Millennium Development Goal aimed at poverty reduction, the International Trade Centre (ITC) and the International Telecommunication Union (ITU)[32] have combined their respective strengths to raise awareness on the potential of Mobile phone for business (m-business) applications in developing countries, especially LDCs (Least Developed Countries). ITC and ITU, in response to a request from Burkina Faso, have conducted an m-business potential assessment in this country. The assessment revealed that:

- There is a strong demand for daily market information and buyer's information;
- Fruit and vegetables exporters consider that following up-to-date market trends would increase their export volumes;

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30 UNIDO - Mobile Phone Solutions for SMEs - Africa, the world's fastest-growing Mobile phone market - The challenge: customizing Mobile phone services for SMEs

[31] telecomasia.net, **Nov 09, 2007** By Claudio Castelli/Ovum *Wireless Asia*
[32] International Trade Centre (ITC) 1994 – 2006

- Mobile phone is now the ubiquitous tool that could improve their position in their value chain by strengthening their information base and hence their negotiation power; and
- M-business information systems exist and simply lack funds for wider application.

Therefore, use of the fast growing Mobile phone network, and text messaging capacity, to disseminate real-time market information to SME exporters is quite beneficial.

4.8.2 Internet and E-Mail

Currently the Internet is most commonly used by SME firms in developing countries for communication and research. E-mail is considered an important means of communication. However, the extent of use is limited but may increase after an initial face-to-face interaction with both suppliers and buyers. E-mail, therefore, becomes a means for maintaining a business relationship. It is typically the first step in e-commerce, as it allows a firm to access information and maintains communications with its suppliers and buyers. This can then lead to more advanced e-commerce activities.

To date, e-mail is the predominant and most important use of the Internet in developing countries. In Bangladesh, 82% of Internet use is attributed to e-mail, vis-à-vis 5% in the United States. The Web accounts for about 70% of Internet use in the U.S. This is due to the relatively high Internet access costs in most developing countries. However, the Internet is considered an inexpensive, although imperfect, alternative to the telephone or facsimile machine-i.e., it is inexpensive due to the higher speed of information transmission and imperfect because it does not provide two-way communication in real time unlike the telephone.

For SMEs in developing countries, the Internet is a quick, easy, reliable and inexpensive means for acquiring online technical support and software tools and applications, lodging technical inquiries, requesting repairs, and ordering replacement parts. The Internet is also instrumental in enabling SMEs in developing countries to join discussion groups with their peers across the globe that are engaged in the same business and could share information, experiences and even solutions to specific problems. This is valuable especially to entrepreneurs who are geographically isolated from their peers in the same business.

The Europages Observatory[33], a research company, surveyed 3,438 SMEs from Germany, France, Spain and Italy. The results revealed that the Internet significantly raises the imports/exports of surveyed SMEs as compared to the average SME. The Europages Observatory reported that, “SMEs that use the Internet as part of their approach to international development have a dynamic and competitive profile.” In addition, companies were extremely active internationally

[33] Europages Observatory: Internet Has Direct Impact on SMEs' International Development

regardless of their size. Internet advertising is the primary means of international development for SMEs, ahead of events or tradeshows.

4.9 TEACH survey findings and analysis

4.9.1 TEACH findings related to use of telecommunication by SMEs

The Targeted Survey collected information from more than 1000 businesses and other respondents. Important findings regarding the impact of telecommunications on the SMEs in Pakistan are given below.

4.9.2 FLL/WLL, Mobile and Internet

TEACH's findings about the different purposes of using FLL/WLL, Mobile and Internet are given in Table-4.5 and Figure 4.9.

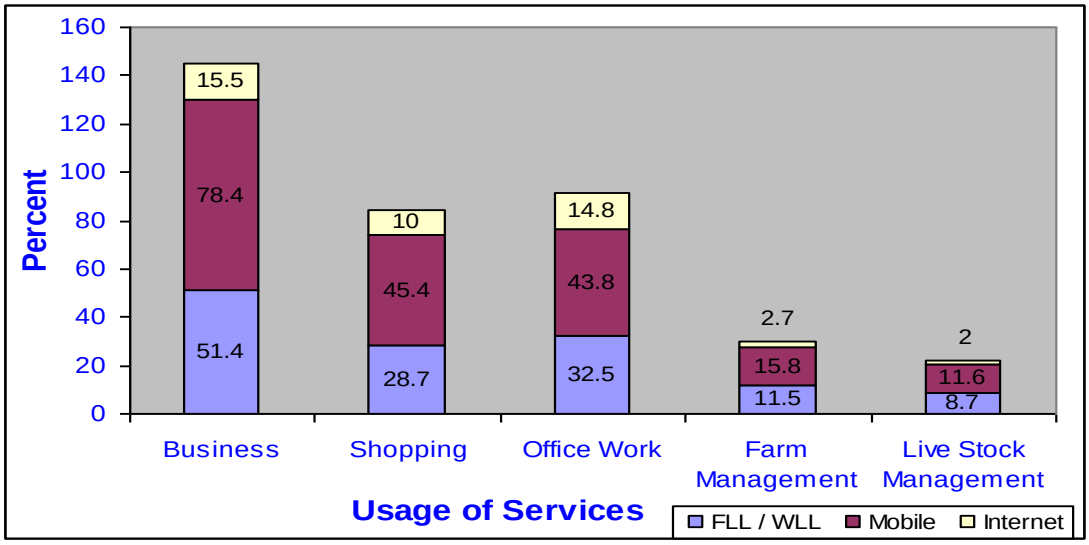
Table-4.5
Purpose of using Telecommunication Services, Pakistan, 2008

(Percent)

Purpose	Telecommunication Services		
	FLL / WLL	Mobile	Internet
Business	50.3	78.5	15.1
Shopping	28.3	46.0	9.7
Office Work	31.9	44.2	14.4

Source: Annex Tables 4.10, 4.11, & 4.12.

Figure 4.9
Purpose of using Telecommunication Services, Pakistan, 2008



Source: Annex Tables 4.10, 4.11, & 4.12.

Reliance on the use of mobile phone is dominant on the part of SME's for all categories of uses. FLL / WLL is the second most important medium while Internet is used by a small percentage of SME's. It is concluded that mobile phone is considered most useful by SMEs in Pakistan for all purposes. As explained

earlier, it is in accordance with international practice especially in developing countries.

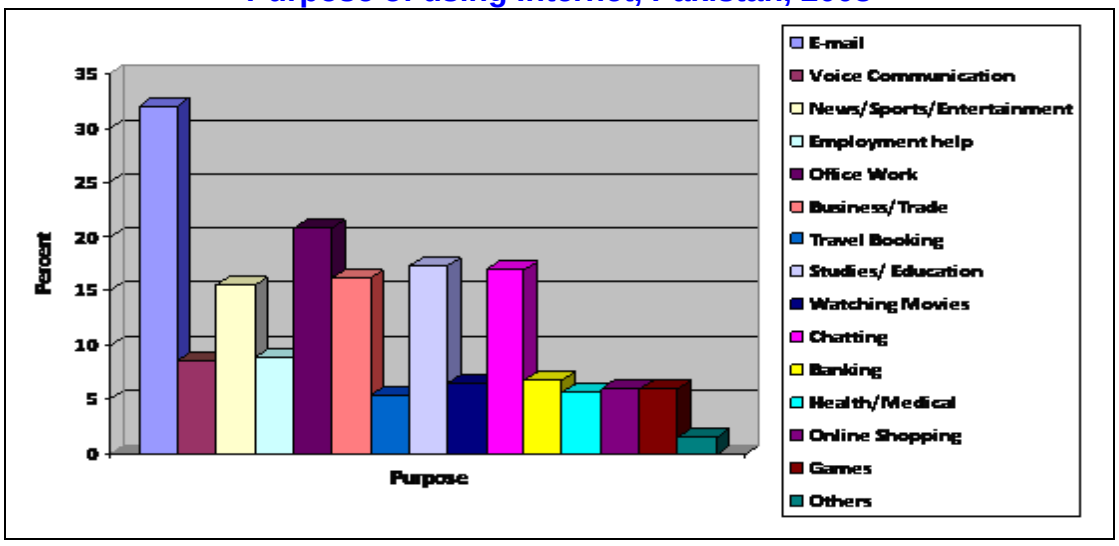
4.9.3 Purpose of using Internet facility (business), Pakistan, 2008

About 15% SMEs in Pakistan use Internet for doing business as shown in Table 4.1. The purpose of using Internet by SMEs as assessed from the survey results is given in Table-4.6 and Figure-4.10.

Table-4.6
Purpose of using Internet by SMEs

Purpose of Use	Percent	Number
E-mail	32.0	375
Voice Communication	8.6	101
News/ Sports/ Entertainment	15.5	181
Employment help	8.9	104
Office Work	20.7	242
Business/ Trade	16.1	189
Travel Booking	5.4	63
Studies/ Education	17.2	201
Watching Movies	6.4	75
Chatting	17.0	199
Banking	6.8	80
Health/ Medical	5.6	65
Online Shopping	6.0	70
Games	6.0	70
Others	1.5	17

Figure-4.10
Purpose of using Internet, Pakistan, 2008



It is clear from the survey results that 32% of respondents were using Internet just for e-mail while about 21% of SMEs were using it for office work. Exchange of e-mails and office work all relate to business activities. About 17% were using it either for education or for chatting. Education purpose means know

how about business tactics, market information and price variations whereas chatting may be for exchange of views on business issues. Around 16% were using Internet for Trade/ business. About 9% were using Internet for employment as it is the most efficient means to get information about employment avenues. About 7% were using it for banking purpose as it is the fastest efficient means of communication for settling financial transactions. 6% respondents were found taking interest in online shopping for business purposes. More than 8% of SME's were using it for voice communication which is also an important purpose of business. The response in case of other purposes was not much related to business.

4.9.4 Impact on Time and Money

The impact of telecommunications growth on time and money savings was assessed on the basis of certain parameters. Table-4.7 and Figure-4.11 presents findings.

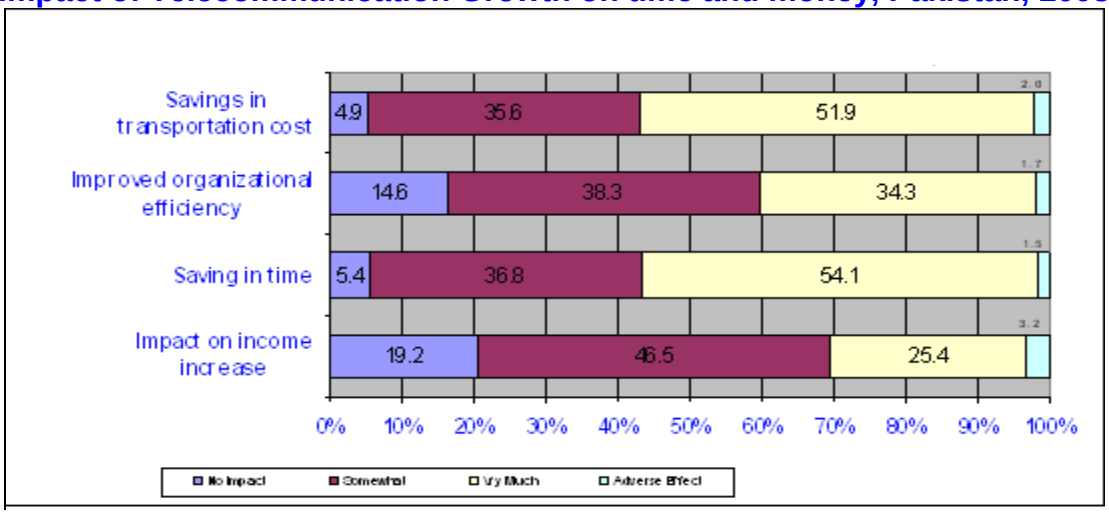
Table-4.7
Impact of Telecommunication Growth on time and money, Pakistan, 2008

(Percent)

Parameters	No impact	Some impact	Lot of impact	Adverse impact
Impact on income increase	19.2	46.5	25.4	3.2
Saving in time	5.4	36.8	54.1	1.5
Improved organizational efficiency	14.6	38.3	34.3	1.7
Savings in transportation cost	4.9	35.6	51.9	2.0

Source: Annex Table 14.15.

Figure-4.11
Impact of Telecommunication Growth on time and money, Pakistan, 2008



Source: Annex Table 14.15.

Findings indicate that more than 46% of respondents feel that their income has increased to some extent due to frequent use of telecommunication services whereas more than 25% feel that telecommunication has played an important role

in increase of their income. About 19% respondents felt no effect of telecommunication use on their income and about 3% respondents considered use of telecommunication leading to increase in their expenses.

54% of the respondents were of the view that telecommunication facilities have helped them in saving their precious time while 39% were of the opinion that they had saved some time due to use of telecommunication services. Saving in time could not be observed by 5% of respondents and about 2% considered use of telecommunication as only wastage of time.

As far as improvement in efficiency is concerned, 34% of the respondents felt a lot of improvement in the efficiency of their organization due to use of telecomm services whereas 38% felt improvement in efficiency to some extent. However, more than 14% considered it as just means of communication and felt no impact of its use on their organization's efficiency while 2% were of the view that it had adverse impact on the efficiency of their organization. This view may be based in a notion that probably telecommunication services were being misused by their staff members.

Saving in transportation cost is an important factor. 52% of the respondents realized that use of telecommunication services had helped them to save a lot in transportation cost while about 36% also felt its impact to some extent. 5% of the respondents felt no impact of telecommunication in saving the transportation cost and 2% were of the view that it had an adverse impact on saving in transportation cost. Probably they might have used transport unnecessarily on having wrong information.

4.9.5 Impact of Telecommunication on business activities

The impact of telecommunication on business activities is discussed as under:

4.9.5.1 Impact of FLL/WLL

Table-4.8 and Figure-4.12 show the impact of FLL/WLL on business activities.

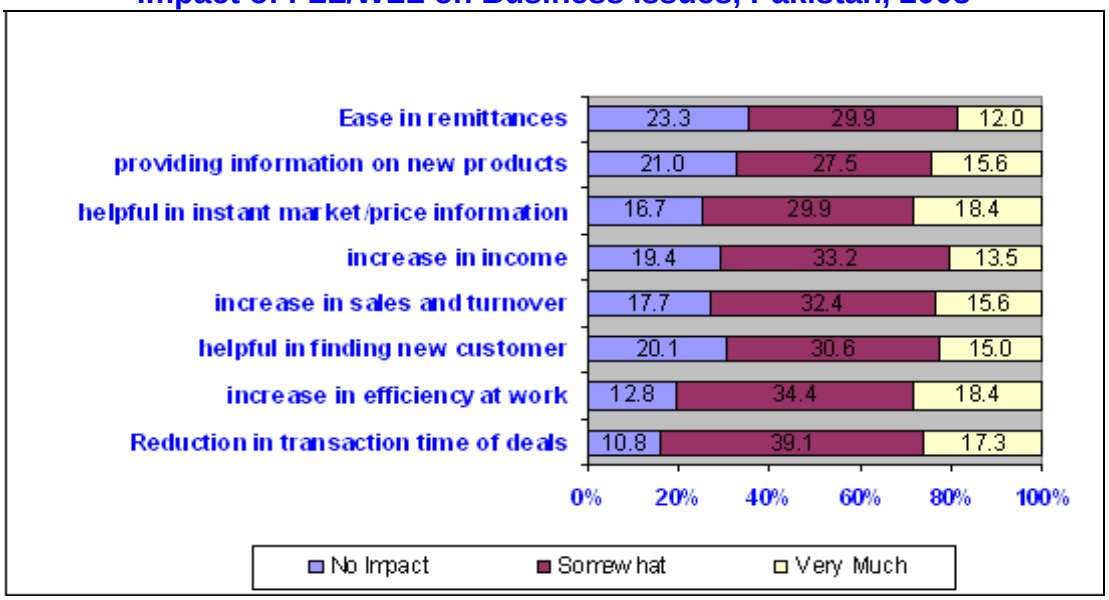
Table-4.8
Impact of FLL/WLL on Business issues, Pakistan, 2008

(Percent)

Parameters	No impact	Some impact	Lot of impact
Increase in efficiency at work	12.8	34.4	18.4
Helpful in finding new customer	20.1	30.6	15.0
Increase in sales and turnover	17.7	32.4	15.6
Increase in income	19.4	33.2	13.5
Helpful in instant market/price information	16.7	29.9	18.4
Providing information on new products	21.0	27.5	15.6
Ease in remittances	23.3	29.9	12.0
Reduction in transaction time of deals	10.8	39.1	17.3

Source: Annex Tables 4.40 and 4.43.

Figure-4.12
Impact of FLL/WLL on Business issues, Pakistan, 2008



Source: Annex Tables 4.40 and 4.43.

Around 15% of respondents were of the view that use of fixed line and wireless telephone services had increased efficiency of staff members. These services were helpful in finding new customers and had resulted in increase of sale and turnover and so had increased their income. They found these services also helpful in having market information, providing information on new products, ease in remittances and reduction in transaction time. Around 30% were also of the same view but assumed the impact of these services was to some extent only. About 20% could not feel any impact of these services on their business.

4.9.5.2 Impact of Mobile

Table 4.9 and Figure-4.13 indicate the impact of mobile phone on business activities.

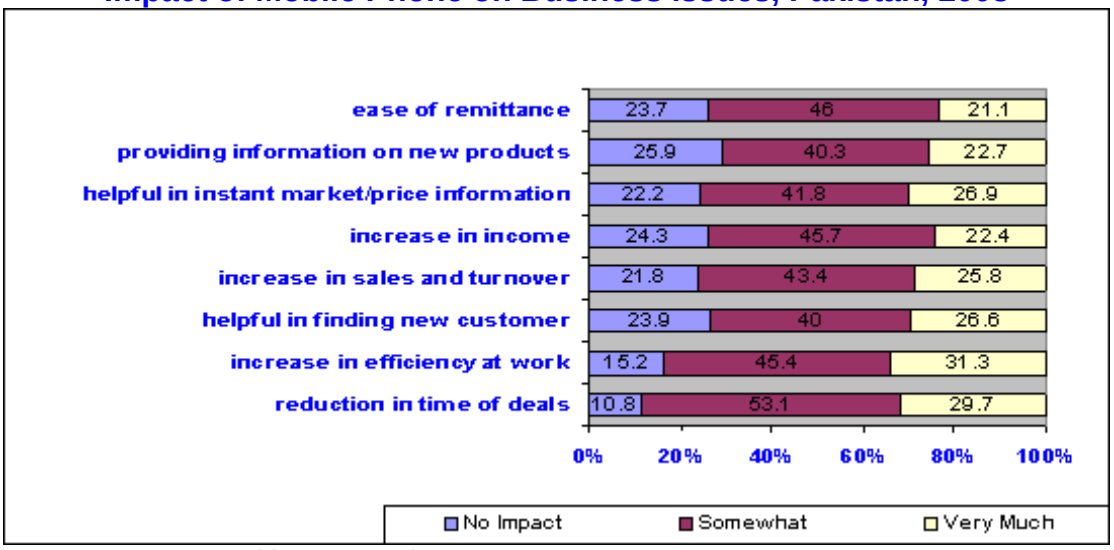
Table-4.9
Impact of Mobile Phone on Business issues, Pakistan, 2008

(Percent)

Parameters	No impact	Some impact	Lot of impact
increase in efficiency at work	15.2	45.4	31.3
helpful in finding new customer	23.9	40.0	26.6
increase in sales and turnover	21.8	43.4	25.8
increase in income	24.3	45.7	22.4
helpful in instant market/price information	22.2	41.8	26.9
providing information on new products	25.9	40.3	22.7
ease of remittance	23.7	46.0	21.1
reduction in transaction time of deals	10.8	53.1	29.7

Source: Annex Tables 4.41 and 4.44.

Figure-4.13
Impact of Mobile Phone on Business issues, Pakistan, 2008



Source: Annex Tables 4.41 and 4.44.

Around 21%-31% of respondents were of the view that use of mobile phone services has increased efficiency of staff members. It was helpful in finding new customers. It has resulted in increase of sale and turnover and increase in their income. It was found that these services were also helpful in having market information, providing information on new products, introducing an element of ease in remittances and reduction in transaction time. Around 40%-53% were also of the same view but indicated that impact of these services to them was limited to some extent only. About 11% - 26% could not feel any impact of this service on their business.

4.9.5.3 Impact of Internet

The impact of Internet on business is given in Table-4.10 and Figure-4.14.

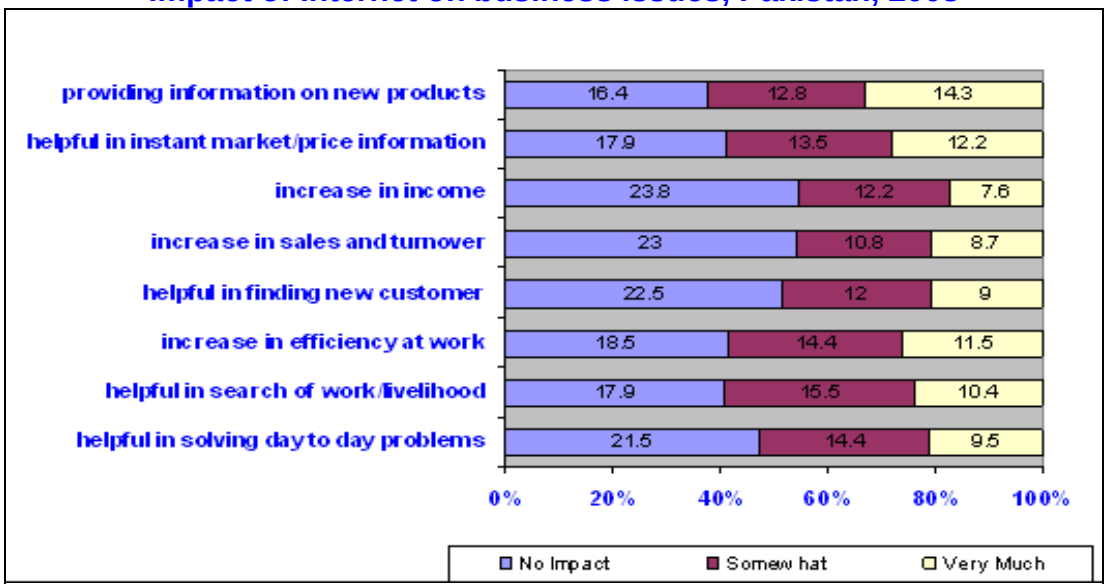
Table-4.10
Impact of Internet on business issues, Pakistan, 2008

(Percent)

Parameters	No impact	Somewhat impact	Lot of impact
helpful in solving day to day problems	21.5	14.4	9.5
helpful in search of work/livelihood	17.9	15.5	11.5
increase in efficiency at work	18.5	14.4	11.7
helpful in finding new customer	22.0	12.0	9.0
increase in sales and turnover	23.5	10.9	8.9
increase in income	24.4	12.2	7.6
helpful in instant market/price information	17.9	13.5	12.2
providing information on new products	16.4	12.8	14.3

Source: Annex Table 4.42.

Figure-4.14
Impact of Internet on business issues, Pakistan, 2008



Source: Annex Table 4.42

More than 14% of respondents reported that Internet is quite helpful in getting information about new products and 12% were of the view that it keeps them informed about the market situation and increase/ decrease in prices. In the opinion of a similar percentage of respondents, it was helpful in providing information about new products and market/ price information to some extent. More than 11% were of the view that it was very useful for searching work/ livelihood and increasing efficiency at work while about 15% considered it somewhat useful for searching work/ livelihood or increasing efficiency at work. About 9% were of the view that use of Internet helps a lot in solving day to day problems, in finding new customers and increasing sales and turnover whereas 11-14% found it somewhat useful for the said purposes. More than 7% informed that it had helped a lot in increasing their income whereas 12% were of the opinion that it helped only somewhat in increasing the income. However, 18% to 24% did not feel any impact of Internet on their business. This was so as probably either they did not use it for business purposes or they were not aware of its benefits for growth in their business. Impact in case of remittance & transactions is given in Table-4.11 and Figure-4.15:

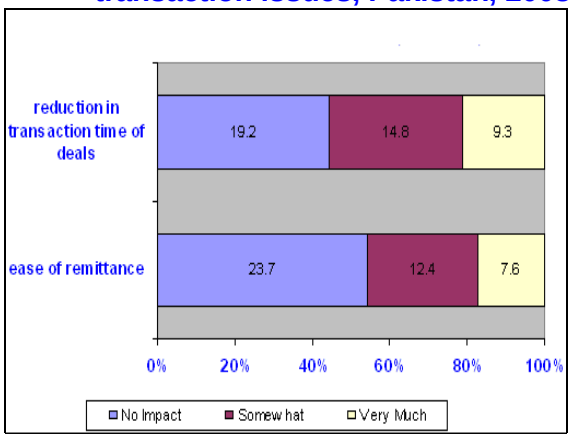
Table-4.11
Impact of Internet on remittance & transaction issues, Pakistan, 2008

(Percent)

Parameters	No impact	Some what	Very much
Ease of remittance	23.7	12.4	7.6
Reduction in transaction time of deals	14.8	15	9.3

Source: Annex Table 4.45

Figure-4.15
Impact of Internet on remittance & transaction issues, Pakistan, 2008



Source: Annex Table 4.45.

From the findings it seems that SMEs are still not much aware of using Internet for business purposes as only 9% considered it very useful for reduction of transaction time in deals whereas 15% thought it somewhat useful and 15% did not experience its impact for the said purpose. Moreover, about 8% were of the view that it provides ease in remittances whereas more than 12% did not agree with the view and opined that it is useful to some extent. 24% of respondents found no impact of Internet on their remittances.

4.9.6 Focus Group Discussion (FGD)

In addition to survey, a Focus Group Discussion (FGD) of Small and Medium Enterprises (SMEs) was arranged to find out views in the context of various telecommunications Services.

The members of Focus Group were involved in the businesses like oil mill, ghee industry, steel manufacture, leather factory, wood works, weaving factory, ginning factory, ice factory, cement factory, soap factory, printing of cotton products, marble factory, packaging industry, food factory, chemical factory and loom industry etc. from all over Pakistan

From the response from Focus Group of SMEs, it is found that they were looking at telecommunications facilities as a business tool rather than primarily for personal purposes. In the use of mobile phone, for example, they sent comparatively less number of SMS messages but the purpose of sending such messages was mostly related to business. They initiated a small number of messages for social purposes but messages were mostly for business and news. In the use of Internet as well the focus group response revealed that the Internet connection was generally used for e-mail and business related work.

Most of them found that the mobile phone was helpful in increasing efficiency at work, finding new customers and for increasing sales. Some of them

informed that it was a lot helping in providing instant market information and for increasing income.

As far as Internet is concerned, several people indicated that it is a tool for increasing efficiency, finding new customers and for increasing sales. They also thought it was responsible for increase in income.

Most frequent comment about Internet advantages was about finding instant market information and also helping in getting information about new products. Concerning reduction in transaction time majority of them reported positive impact and rated the impact under this activity to be “a lot”.

In case of fixed phone and mobile phone, the group considered mobile phone more helpful in ease of remittances as compared to Fixed Phone and WLL.

4.9.7 Impact of LDIs, PRN, UAN and Focus Groups Discussion

Focus Group Discussions were also held about the pros and cons of telecommunications services like LDI, Calling Cards, UAN, PRN and Toll Free numbers.

Slightly less than half of the group disclosed that they made use of LDI (Long Distance and International) calling cards. Less than half use it for nationwide and overseas calls and thought LDI card useful for increased overseas contact and for increase in business.

In context of the usage of UAN (Universal Access Numbers) it is reported from the focus group that not all the participant’s found these numbers useful while one third had experienced good impact on their business.

About usefulness of PRN (Prime Rate Number) service, half of the participants rated it to have good impact on business and about the Toll Free Number service, most of them thought it to have substantial impact on business.

4.9.8 Small Business Promotion: Case Studies

As already pointed out, the schemes initiated by the Government in the past had limited scope and did not adequately address the core issues of SME enterprises with the increased access to new technologies, prospects for SME’s have improved considerably.

Telecommunications services have enabled SME development to become a core element of economic development processes. Today mobile phones and other telecommunication services have made clients, owners and employees contactable at all hours and have reduced transaction time and have provided

Case study-4.1
Small Business Promotion Example of Water Pump Use

Najam Rauf Mughal is running a business of water pumps in Gujranwala. He has experienced positive impact of internet on his business.

Prior to Internet usage, time was wasted on postal service. Contacting customers and dealers from distant places on daily basis was quite difficult especially in remote areas. Gradual spread of internet use is making his business grow.

Mr. Mughal has started using internet facilities especially e-mail with corporate entities. With the use of Internet, it's easier to handle customers. Days are saved for example through online payment.

Internet usage depends on awareness about computers, which in turn depend on facilities provided and the literacy rate. Mr. Mughal has started using the internet. He advocates widespread use of computers.

Source; TEACH Research

easy and fast means of money transaction. Evidence on these issues through case studies is presented below.

Dot com' culture has emerged in Pakistan and is expanding fast. There is an enormous growth of Pakistani websites, portals of information and search engines. Government has taken important steps for the rapid development of electronic commerce.

4.9.9 Small Business Promotion-Example of Textile Exports

The exports of textile products is the main source of earnings of foreign exchange. The economy of Pakistan is faced with the problem of negative trade balance. Textile sector has a large potential for export growth. Telecommunications has a vital role to play in improvement of textile design, quality control and distant display of prints and products in overseas markets.

Case Study-4.2
Small Business Promotion using Internet

Mr. Muhammad Afzal has a flourishing business in Karachi. He is depending on iinternet technology to an extent that he cannot imagine working without it.

Through Internet, he updates himself with latest information and accesses new clients. He has witnessed an increase of 20% - 30% in orders from clients. He also found it helpful in technology transfer in the form of purchasing machinery online. For him, Internet makes his business compatible with the business in European countries as e-mail has become an essential component of the digital world. His time and money are saved as telephone and Internet have become cheaper. He maintains Internet has revolutionized his business.

Source; TEACH Research

In rural areas, use of ICT's is still limited. The telecommunication technology is mainly being used in furthering .social interaction. Pakistan media promotes the use of technology in society with slogans as 'keep talking'. Advertisements also portray the use of ICTs for social interaction. People need to be educated on how to use the ICTs efficiently and effectively in support of the production process. If the technology is only used in social matters, an important source of economic growth remains untapped.

4.10 Conclusions

It is concluded from the survey results and Focus Group discussions that most of the SMEs had used mobile phone for business purposes including shopping and office work. As an alternative, fixed or wireless phone is also used for the same purposes. Internet is mostly used for e-mail purposes by SMEs but they also use it for trade/ business, office work, education, chatting, market/ price information, employment, banking, online shopping and voice communication.

Findings indicate that due to use of telecommunication services, profits of SME's had increased. This was due to saving in time, increase in efficiency of organization and savings in transportation cost. Use of telecommunication services had resulted in finding new customers, increase in sale and turnover, increase in their income, provision of information on new products, ease in remittances and reduction in transaction time.

It is safe to conclude that a developed national information infrastructure is a necessary condition for e-commerce uptake of SMEs. Without reliable and inexpensive telecommunications and other information services, SMEs will never be able to go online. An important strategy in this regard may be the development of "telecenters" or electronic community centers that would serve as a community-shared access and connectivity platform especially in the rural areas (e.g., an electronic agri-information center which would provide market information to farmers in rural areas). Such telecenters can also be a venue for capacity building, skills enhancement, training, communications and content development. Government can also adopt agglomerative approaches to Internet use to reduce costs (e.g., export aggregators, such as B2B or B2C portals/ exchanges for SMEs, which would facilitate trading with fellow SMEs and with other companies in the international market).

Chapter-5

Impact of Telecommunication on Poor

5.1 Introduction

Poverty is generally understood as individuals living below subsistence income levels. The definition of poverty includes the state of malnutrition, lack of shelter and inaccessibility to health and education services, unemployment, powerlessness and lack of freedom. Telecommunications have potential to make major contributions both at the level of the individual (training, access to information) and the economic environment (improved market access and linkages). Of course, access to telephones or the Internet cannot be considered a basic need of the poor as compared to food, water, shelter and sanitation yet access to telecommunications does provide the poor with a potential means to escape from poverty. This potential can take many shapes, including income generating opportunities, improved skills through distance learning, access to market and price information etc.

The growth in telecommunications services contributes to social and economic development in a variety of ways. Access to telephony has become much more widespread in developing countries as a result of the spread of cellular mobile services and wireless networks. This has made telephony available to millions of people, either as private subscribers or as users of PCOs/ Customer Service Centres/ telecenters etc. In rural areas where medical and educational facilities are lacking, telecommunication facilities are considered to be a source of improving the situation. The expansion of telecommunications connectivity has also provided access to Internet and broadband services, although these are so far used by a very small proportion of population.

While discussing importance of telecommunications for poverty alleviation, role of ICT cannot be ignored. ICT can play important roles both as an industry sector to drive economic growth and as an enabler to help achieve other goals in areas such as education, health, and governance. ICTs can enhance poor people's opportunities by improving their access to markets, health care and various government services. However, large-scale ICT adoption has not been widespread due to limited access, lack of ICT literacy, and undeveloped local content and manufacturing capacity. Still, integrating ICT with macro development efforts can be an effective conduit to quickly and efficiently transport large amounts of information for multiple purposes[34]. The Millennium Declaration 2000; a unanimous resolution adopted by the world community against poverty, has also highlighted the importance of ICTs towards poverty alleviation by making it a part of the Millennium Development Goals (MDGs).

[34] UNDP-**Do Governments Actually Believe that ICT Can Help Alleviate Poverty?-**A Perspective from Poverty Reduction Strategy Papers (PRSPs)-**APDIP e-Note 2 / 2005**

5.2 Situation in Pakistan

With high birth rate and relatively lower growth in GDP the incidence of poverty in Pakistan increased during the years 1990-2000. In 1990 the incidence of poverty was 26% while it became 32 percent in the year 2000. The PSLM (Pakistan Social and Living Standards Measurement Survey) Report 2006-07[35] indicates that 21.35 percent households are worse or much worse (23.92 percent in 2004-05) whereas Planning Commission's Annual Plan 2008-09 indicates population below poverty line as 28.1% for rural and 14.9% for urban and 23.9% total based on 2004-05 figures (Chapter 19-Rural Development, special Areas and Drought Recovery Program). According to "Poverty News Blog" dated 18 September 2007, Pakistan has in real terms 34 percent of its population living below the poverty line which is much higher than the government's figure of 24 percent. Further, according to "Poverty News Blog" dated 3 December 2007, the World Bank conducted its own analysis and its estimates showed a poverty figure of 29 per cent in 2004-05 against official figures of 23.9 per cent[36].

The growth rate of telecommunication in Pakistan has been always higher than the GDP growth rate and it is expected that this pattern will continue to be so. The FDI in telecommunication over the last three years has been more than 35 percent of the total FDI. The telecommunication coverage in the coming days will be extended to the unserved areas where all type of infrastructure like the roads, schools and hospitals is lacking. Provision of telecommunication facilities in such areas will increase the access of population of these remote areas to Medicare/ healthcare, education and law enforcement agencies. It will help integrate these areas with the main stream markets. The agricultural produce of these areas will fetch better returns because of market information. Though small telecommunication will certainly play its catalyst role in the overall socio development and pave the way for sustainable development of these areas, creating jobs and business opportunities.

5.3 Telecommunication facilities for poor in Pakistan

Public Call Offices are providing service to poor since long throughout the country. At the end of the year 2007-08, 449121 payphones were in operation with 266534 WLL PCOs, 61229 Mobile Phone PCOs and 121,358 Fixed Line PCOs[37]. As the cost of mobile telephone connection reduced, people bought their own telephone and use of payphones reduced. As call rates came down due to competition, the commission from these (income of the holders) reduced substantially bringing a slump in this business. However, in the rural and far flung areas (and where there is more poverty) the PCOs are still an income generating facility as during the last year alone 43742 Mobile and 40554 WLL PCOs have been added[38].

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[35] Executive Summary-**P S L M –2006-07-**PAKISTAN SOCIAL AND LIVING STANDARDS MEASUREMENT SURVEY (2006-07)- Government of Pakistan Statistics Division, Federal Bureau of Statistics, Islamabad-**DEC - 2007**

[36] Biz Pak Tribune dated December 05, 2008

[37] PTA Annual Report 2008

[38] PTA Annual Reports 2007 & 2008

5.4 International evidence on role of telecommunication in poverty reduction

The use of technology for poverty reduction varies from country to country depending upon country's limitation towards implementation of modern technology. Regarding rural poverty alleviation, "The biggest problem in the rural areas is not the lack of infrastructure penetration but the affordability of services to the local population. This causes an uncertain return for any party considering an investment in rural infrastructure and could lead to the rural population being bypassed."[39]

Cell phones not only offer opportunity through voice services but also bring Internet access to phones bypassing the need for a computer for connecting to the World Wide Web. A study found 97 percent of people in Tanzania can access a mobile phone and Internet without a costly PC[40]. In India, Internet connectivity is a key to improving the livelihood of rural poor by giving them access to information -- everything from crop prices to acquiring land. Internet access can simplify interaction with government institutions for tasks like acquiring an identity card as well as potentially increasing transparency and reducing corruption in transactions with officials[41].

The benefits that mobile phones bring at a local level can be extended to a country as a whole. The survey[42] also found a number of other benefits from mobile phone ownership such as:

- Mobile phone saves people living in rural communities, from financial costs and time involved to travel. 85 percent of people in Tanzania and 79 percent in South Africa said they had greater contact and improved relationships with families and friends as a result of mobile phone;
- 62 percent of small businesses in South Africa and 59 percent in Egypt said they had increased their profit as a result of mobile phone, in spite of increased call costs;
- Over 85 percent of small businesses run by black individuals in South Africa rely solely on a mobile phone for telecommunication.

The results of this study[43] suggested that growth in the African telecommunication market will continue to pay off African economies.

In a report on "The Impact of Telecoms on Economic Growth in Developing Countries", Leonard Waverman, Meloria Meschi and Melvyn Fuss[44] conclude that the coefficient on the average mobile penetration from 1996 to 2003 (MPENL for

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[39] **Telecom Reform and Poverty Alleviation in Kenya by Sean Kane,** *LINK Centre, Graduate School of Public and Development Management, University of the Witwatersrand, South Africa*

[40] **Cell phones may help "save" Africa By Rhett Butler, mongabay.com-July 11, 2005** [Corrected July 18, 2005]

[41] **Cell phones may help "save" Africa By Rhett Butler, mongabay.com-July 11, 2005** [Corrected July 18, 2005]

[42] **Cell phones may help "save" Africa By Rhett Butler, mongabay.com-July 11, 2005** [Corrected July 18, 2005]

[43] **Cell phones may help "save" Africa By Rhett Butler, mongabay.com-July 11, 2005** [Corrected July 18, 2005]

[44] These studies include Hardy (1980), Norton (1992), and Roeller and Waverman (2001)

low-income countries and MPENH for high-income countries) was positive and significant for both cases, but the impact was twice as large for the low-income countries. Indeed, the results suggest that long-run growth in the Philippines could be as much as 1 percent higher than in Indonesia, were the gap in mobile penetration evident in 2003 to be maintained. The Philippines had 27 Mobile phones per 100 inhabitants in 2003, compared to 9 per 100 in Indonesia. Another estimate of the importance of mobiles to growth can be seen by comparing Morocco to the "average" developing country. In 2003, Morocco had 24 Mobile phones per 100 inhabitants, compared to 8 in the typical developing country. Were this gap in mobile penetration maintained, then Morocco's long-run per capita growth rate would be 0.95 percent higher than the developing country average. Thus, current differences in mobile penetration between developing countries might generate significant long-run growth benefits for the mobile leaders. Finally, while Argentina and South Africa both had disappointing economic performance over the 1980 to 2003 period, both registering negative average growth in per capita incomes, the analysis suggests that South Africa's higher level of mobile telecoms penetration over the period (17 for South Africa versus 11.4 for Argentina) prevented this difference from being even larger – South Africa's negative average per capita growth of 0.5 percent compares with Argentina's negative average per capita growth of 0.3 percent, but this difference would have been 0.3 percent wider had it not been for the greater spread of mobiles in South Africa.

The lower cost of handsets addresses another barrier to widespread adoption of cell phone. Since taxes and duties are based on the cost of the good service, lower prices mean less tax burden on consumers. Stimulating sustainable economic growth through micro enterprises and information technology is a better solution than direct aid to eradicate poverty. Too often direct aid has not only bred corruption and the mis-allocation of resources away from those who need it most, but has also fostered dependency and skewed the perceived value of goods and services. Private sector investment through mobile phones does a better job eradicating poverty, building dignity and respect, encouraging entrepreneurship, and reducing dependency. In short:

- Telecommunications business especially mobile is profitable when it expanded into the low-income markets;
- The primary driver for this growth is the lowered cost of ownership and services to the poor through a mobile phone via lowered costs of delivery and mass market innovations as the cheapest alternative. Innovations such as electronic loading further improve delivery and affordability;
- Business opportunities are created for small retailers and entrepreneurs;
- Mobile Technology may be considered as an effective financial tool;[45]

[45] Technology and Poverty Alleviation, Harnessing Telecommunication for Development by **Jeff Tarayao,** Head, Community Relations and Social Responsibility | Globe Telecom, Inc. Philippines

According to Dr. Hamdoun Toure, Secretary General ITU, a 10% increase of mobile phone penetration in a country contributes to the Gross Domestic Production (GDP) growth by 1.2%.

A research[46] was undertaken in three different developing countries India, Mozambique and Tanzania in the second half of 2004. In each country, mostly heads of households were interviewed at length about their household circumstances, communications requirements and behaviour, their use of telephones and their attitudes towards them. They were also asked about their use of Internet. Key findings from this study of the use of telephony were strongly consistent in all three research countries (India, Mozambique and Tanzania). Telephones were:

- considered very important in emergencies;
- extensively used to maintain social networks, especially contact within the family;
- valued more for saving money than for earning money;
- valued more by richer and better educated people than by the poorer, especially where financial value was concerned;
- considered important for information gathering.

Hardly anyone in the sample populations had yet used the Internet.

Telephone is the primary source of communications in emergency for providing immediately help especially when such it is sought from a remote area. It is something that no other communications medium can provide. This is also true in case of urgent need for money as well as in case of immediate emergencies related to health or injury.

Communication within the family is the second key use of the telephone identified by the respondents. This is much more important than communication with non-family members, particularly in Mozambique (which has a substantial proportion of migrant workers). Only about 5% of users identified business as their primary use of the telephone, while the proportion that described “gaining new knowledge” as their first, second or third most significant use was very low, under 2.5%.

This finding is repeated in other status categories – such as educational status, telephone ownership and frequency of telephone use - suggesting that the telephone is having a positive economic impact on the more prosperous members of society but not on those who are more marginalised. For these more marginalised groups, the value of the telephone lies overwhelmingly in its availability for emergencies and its contribution to family networks.

[46] D. Souter et al., The Economic Impact of Telecommunications on and Rural Livelihoods and Poverty Reduction (CTO for DFID, 2005)

Much more important is the impact which the telephone is having on postal services. The large majority of respondents in all three countries reported a very large reduction in their use of postal services since the telephone became available.

The impact of the telephone on economic activities is mixed. The telephone is considered to have value by a high proportion of users when it comes to saving money (for example, by substituting for transport or postal costs), but it is not considered to have value by most users when it comes to earning income. Only the more prosperous, educated and successful are finding it valuable in this area. Lower income and lower education status groups, by contrast, find it unhelpful. The telephone may well, therefore, tend to increase the differential in financial capital between the more prosperous and the more marginalised within society.

The telephone is having no impact on information-gathering. For all groups, face to face communications remains the overwhelming medium of communications for information-gathering. The Internet has also failed to achieve any significant degree of usage in this area. This clear rejection of the telephone, in particular, for knowledge-gathering has significant implications for policymakers designing public information and other development strategies.

Following are the few international success stories in brief where developing countries have adopted traditional technology depending upon their resources to improve the socio-economic conditions.

- In China distance learning has facilitated the education process and provided access to the masses because traditional universities cannot meet the demand.
- Continuation of prudent policies in Taiwan over the last few decades, have resulted in a dramatic reduction in poverty and the country has joined the ranks of progressive competitive economies.
- Major ICTs based reforms in Chile have reduced the percentage of people below poverty line from 40 percent to 17 percent.
- In Mexico over 700,000 secondary school students in remote villages have access to lectures delivered through close-circuit television, and teleconferencing between students and teachers.
- In Ginnack, a remote island village on the Gambia River, nurses use digital camera to take pictures of symptoms for examination by a near-by doctor. Data such as X-rays are compressed and sent to various parts of the world for a more specialized opinion.
- ICTs played an important role in the creation and implementation of programs to control river blindness in West Africa. Data collected along the 50,000 km of rivers with aid of sensors was fed into the computers and beamed to a network of entomologists by satellite radio. These efforts have protected 30 million rural people and eliminated river blindness in seven countries.

- Some developing countries have been able to create employment for thousands of women and men through community access points and telecentres. A group of ladies in Kizhur village Pondicherry established an incense-sticks firm. Initially they started as subcontractors. However, their confidence grew by utilizing a telecentre. By acquiring necessary skills today they are seeking more distant clients using the telecentre.
- Grameen Bank in Bangladesh has provided around 1,100 telephones to the rural poor women through micro credit loans. These women are now making profit by reselling airtime to the others in village.

5.4.1 Framework for impact of telecommunications on poverty reduction

Figure-5.1 and Figure-5.2 outline the steps for poverty reduction through a World Bank telecommunications reform project.

Figure-5.1

From Intervention to Access

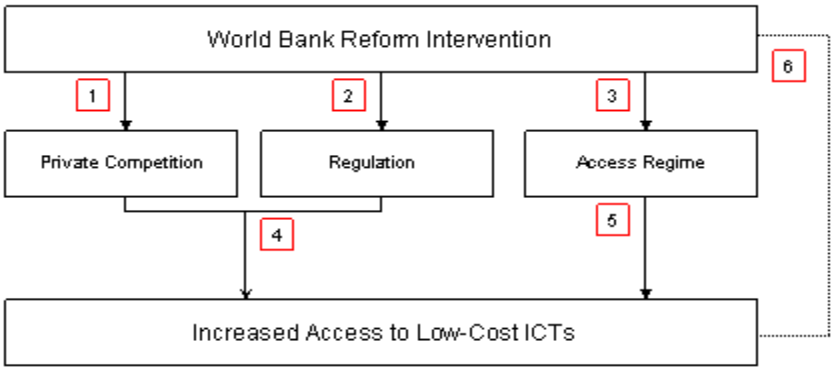
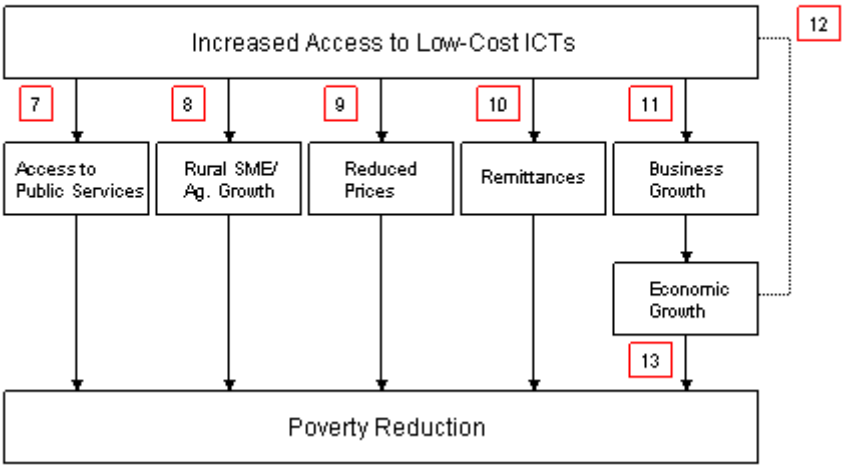


Figure-5.2

From Access to Impact



Source: From Intervention to Impact in World Bank Telecoms Reform Projects (2005)

5.5 TEACH survey for assessment of Socio-economic impact in Pakistan

It should be recognized that poverty has a multi dimensional nature and all sectors of the economy which have impact on GDP, influence poverty incidence in one way or the other. Telecommunication growth in the country has effect on the GDP and it has been proven that improvement in teledensity contributes to GDP growth. For example mobile industry alone contributed over 5 percent of GDP in the year 2006. In the survey on socio economic effect of Telecom, it has been established that in certain cases use of telephone and Internet has been instrumental in increasing the income of the incumbent.

The results of the survey regarding the income groups of less than 5000 a month and 5,000-10,000 a month are especially interesting. This income group which lies below the poverty line has indicated to a varying degree that not only in some cases use of telephone has helped the incumbent to find work, to increase his/her income but also to improve the savings. The outcome also shows that his/her access to healthcare and education facilities improves with the telecommunication use.

Many respondents in survey have indicated that they are able to do multiple jobs because of the telephone facility and thereby their income has increased as a result of better productivity and better use of their time. Some low income males/ females informed that their services can be hired on part time basis at one's convenience by contacting through mobile phone and they can provide services at various locations efficiently by remaining always in contact. Moreover, they keep contact with each other on phone and fix time to share the same transport for approaching a particular area and thus save time and transportation cost in addition to increase in their income.

5.5.1 Findings of survey related to low income group

The FLL/WLL use for all purposes by business / working personnel with low income upto Rs 5000 is quite less than persons in other income brackets. The mobile users with low income also use phone occasionally for all purposes except for farm and live stock management where its use is reported higher than other income brackets. PCO/Pay phone for all purposes is used more by low income business/working personnel than other income groups (Annex Tables 5.1 to 5.4).

A higher proportion of the low income group persons used mobile phone for game/entertainment than other income group personnel and a higher proportion of low income group don't send or receive SMS compared to other income group users. A very high proportion of low income group business/working personnel have reported the non-affordability of having Internet than other income groups.

The low income group persons reported less 'somewhat' and 'very much' change on letter writing, face to face meetings and travelling compared to the overall average of all respondents (Annex Tables 5.5 to 5.7).

Impact of telecommunication growth on saving in time, increase in income, savings in transportation cost and improved organizational efficiency reveals that a higher proportion of low income persons (up to Rs 5000) had no impact on the above mentioned factors compared to persons with higher incomes. The 'somewhat' and 'very much' impact is also noted less among low-income group persons (Annex Table 5.8).

To a question on the impact of telecommunication services on different benefits of life such as helpful in solving problems, work/livelihood, increase in efficiency at work, increase in sales and income, ease in remittances reduction in transaction time of deals and helpful in crop and livestock management. Response was reported more among low income group personnel and they reported comparatively no impact or less impact of these benefits on their lives compared to other income group respondents and overall average of all respondents. (Annex Tables 5.9 to 5.14).

Similarly to a question on impact assessment of competition in LDI and calling cards, a high proportion of low income group respondents reported no effect or less effect compared to other income group personnel.

5.5.2 Focus Group discussion of low income users

A Focus Group was formed consisting of low income individuals, twenty five in number, of age group 30 to 48 years having income bracket of Rs.3,000 to Rs. 7,000 per month and practicing various professions like hawker, gardener, electrician, mason, and , Coolie etc. including a clerk, a tailor and a teacher as well. All of them use mobile phones, while teacher, tailor and clerk also have access to a fixed phone. Their expenditure on cell phone has been in the range of Rs.251/- to 500/- pm, while seventeen of them spend up to Rs.250/- on calling cards as well. Price of cell phone handset used by them ranges from Rs.2,000/- to Rs.3,000/-. There are no cut dry or well defined activity areas for which they use cell phone and all mentioned multifarious use for business, family matters, social contact, news, education, health matters etc. For shopping and work the number of users was less. They also used payphones for the same objective.

When asked about problem faced by them in use of phone, three complained about frequent call disconnection, nine said that at time speech was not clear and they faced coverage problem linked with weak signal.

Discussions were held on advantages and benefits of telecommunication and their views are summarized as under:

Two respondents informed that impact of telecommunication use on their income was very much whereas seven felt it to some extent and five could not recognize any impact of telecommunication on their income.

Majority of them found cell phone of somewhat helpful in finding new customers, while 7-8 of them rated its value as very much, however, five of the group did not agree with the said view.

All of them accepted that use of telecommunication has resulted in saving of time and transport cost very much though a few of them were of the view that saving in time and transport cost was to some extent only. All of them agreed that telecommunication facilities have reduced the need for travel.

Overwhelming majority termed telecommunication very much helpful for education whereas fifteen of the respondents considered such facilities very helpful for access to doctors/ health facilities while ten respondents opined that it was somewhat helpful for the said purpose. Vast majority found that telecommunication facilities have provided ease in remittances of money as a means of reduction in transaction time.

Fifty percent of the respondents agreed that telecommunication facilities are very effective for family cohesion whereas other fifty percent considered it helpful to some extent only. Majority shared the view that need for letter writing had reduced. About half of group sent and received SMSs to a limited extent.

When asked about use of fixed phone, some of the members of the group explained that it was not affordable while majority expressed that they had no use of it. About Internet, they responded that neither it was affordable nor there was any use of it for them. Further they found its learning and use quite complicated.

5.5.3 Case studies

It would require a full-fledged study to look into the poverty reduction contribution of telecommunication but the case studies which are given here would certainly prove that telecommunication connections can help increase incomes.

Case Study 5.1
Utility of Mobile Phone by loading/unloading labourer

Muhammad Akhtar has a family of eight members living in Haripur - he is a loading-unloading Labourer. He loads and unloads vegetables and fruits from trucks at 'subzi mundi'.

Prior to using Mobile, he had to visit mandi to find when a truck is arriving or departing. Then he bought a Mobile though he uses PCO – he cannot afford fixed landline. He does not use short message service. Having a Mobile made him stay at home and get the information if a truck needs a Labourer.

He is a happy man as Mobile played a significant role in raising his income and saving his time and money. His monthly earning has increased from Rs.4000 to about Rs.6,000.

Source: TEACH Research

Case Study-5.2
Utility of Mobile Phone by Low Income Households

A sweeper, Rashid Mushtaq, started using Mobile four years ago and experienced it very useful in day-to-day activities and in finding Labour work.

Whenever a person in the market requires his services, he calls him on his Mobile. He showed his dependability on Mobile as it also keeps him in touch with family when he is out of town. Before using Mobile his earning was Rs.4, 000 and now he earns Rs.6, 000 to Rs.7, 000, whereas his Mobile expenditure is merely Rs.500 to Rs.700 per month.

Source: TEACH Research

Case Study-5.3
Utility of Mobile Phone by Labour

A Labourer by profession, Waris Khan is another resident of Tughbala, Pindi road, Kohat found Mobile technology very useful.

He does not earn to an extent to spare money to pay Mobile bills as his earning is based on daily wages. There was a time when he had to wait long hours to get daily Labour. By the Mobile usage, he finds place of the work because skilled Labourers and other people call him for work and he goes to the respective place. Prior to Mobile usage, his monthly earning was Rs. 3, 000, which is now Rs. 5, 500. Now, he gets informed about the place of the work even when he is at home.

Source: TEACH Research

5.6 Government initiatives

In November, 2000 Government laid down its strategy to reduce poverty which was presented in a paper called “Poverty Reduction Strategy Paper” (PRSP). The central programme of PRSP was to engender growth, improve human development and governance and reduce vulnerability of the poor to shocks. Noticeable progress was made and it was claimed by the Government that as a result of concerted efforts at the federal, provincial and district levels across the country reduction has occurred as the poverty incidence has been lower than previously. The PRSP has been updated for a more comprehensive approach including policies on rural development, gender issues, employment, environment and a more focused human development strategy.

Owning a telephone for public use itself has become a business and source of livelihood for many. The Government in 2006 launched a micro credit scheme through which the poor people could buy a mobile pay phone and operate it as a small business. While the results are still to be analyzed, people have availed this facility under President’s Rozgar Scheme.

5.7 Concluding remarks

Telephone ownership is perceived to provide a much higher benefit in providing a sense of security in terms of acting in an emergency and in maintaining social relationships than benefiting financially, though the potential for greater income earning ability and saving costs. Mobile phone, as clear from the survey reports, is the most popular telecommunication service for people with low income. They spend up to 5 -10 percent of their income on it as they find it useful. About the benefits accruing to them, they find this service as source of some what income increase, saving in time and transportation costs. For them, it is a source of social interaction, family cohesion, improving access to doctor and helpful for knowledge. Also it is seen as helpful in search of work, finding new customers and solving day to day problems.

Perhaps the best tool for poverty alleviation is the Mobile phone, a ubiquitous handheld device, which has done wonders for the poor around the world.

Chapter-6

Telecommunication and Gender

6.1 Introduction

"The term ***gender***[47] refers to those differences between men and women that are not biological but social. Differences between women and men are shaped over time, and so can change with time. They are also often culturally specific."

The Information Communication Technologies (ICTs) are powerful tools for empowering poor men and women throughout the world. ICTs applications can be used to provide education, training, job opportunities, access to markets, information related to economic activities and a range of other citizen services. Furthermore, ICTs offer the following opportunities[48] to women in developing countries:

- **Networking and knowledge-sharing:** Women can use ICTs to build political networks, promote advocacy of key issues, share knowledge and experience and mobilize community action to secure women's rights.
- **Income generation:** Women entrepreneurs can use Internet to launch and strengthen their business activities. Through the use of web and email, they can obtain market information, build their customer bases and establish networks of suppliers. They also can use ICTs to evolve the business strategy and improve "back office" operations, such as financial management, market analysis and product design and development.
- **Education and training:** Female students believe that telecommunication and networking is more about thinking and designing than it is about physical work. By using ICTs, women and girls can gain access to new education and training opportunities, surmounting obstacles of distance, cost, traditional seclusion or segregation.

ICTs and the issue of gender disparity in its access and usage have received considerable attention[49]. Poor women in developing countries have little or no access to ICTs due to various factors, including lower levels of education among girls, poor representation of women in technical courses, dominance of men in the ICT laboUr force, socio-cultural norms, constraints of time due to work and responsibilities at home.

One of the major problems facing Pakistan is illiteracy. This is more particular among females. The population of the country is around 165 million and female population is 48 percent of the total population. A major barrier to women's

[47] ITU-Towards a More Equitable Information Society: How and Why of Gender Mainstreaming-Document WGGI 3/11-E, June 2004

[48] Sarah Tisch, Ph.D. Chief-of-Party, dot-GOV Internews Network Email: stisch@internews.org

[49] Connecting ICT and Gender by Patricia Faccin, Working Group on Gender Issues Studies, ITU

access to ICTs is the inability to read and write because literacy of various subjects is the primary requirement for use of ICTs. At present, the literacy rate is 49.9 percent. It is 63 percent for males and 36 percent for females.

Despite appreciable progress the access of women to telecommunication in the recent past lags behind the men. It may be noted that all the women are not disadvantaged as middle class women usually have much greater access to ICTs than most of the poor men. Policy makers need to create conditions by which benefits of ICTs are maximized for women. The aim must be to ensure access of women to ICTs to make it a tool in their empowerment. Telecommunication services and technology provide a base on which ICT infrastructure can be built.

Some social factors, which operate in both institutional and informal manner, are the cause of creating gender differences. In our society, cultural norms do not encourage interaction of women with men. Consequently women may find the situation uncomfortable where men are present.

Usually women move to lower skilled IT jobs and make up a minority of managerial and senior level positions. Number of women in ICT jobs has increased but this does not mean that women have acquired the access and control of ICTs and its resources. At both levels, national and global, decision-making in ICT is generally considered as completely technical matter and women in private ICT companies are underrepresented in boards and management positions.

6.2 Infrastructure and social development

Pedestrian and popular views of science and technology often assume that technology is a tool that society can use and not something that can influence society. This ignores the differential influences of technology on various sections of the society and also assumes that technology is gender neutral. The array of information and communication technologies ranges from fixed line telephones, mobile phones, Internet, satellite technology, radio, television, to the print media. Women's access to and control over ICTs is not equal to that of men. Access refers to the ability to make use of the technology as well as the information and knowledge it provides, while control refers to the ability to decide how ICTs are used and who can use them. Effective use refers to the ability of women and girls to use ICTs strategically to advance multiple development goals. There is a huge gap between women and men's access to telecommunications infrastructure. Information and communication infrastructure is largely concentrated in urban areas, while the majority of women in the developing world are located in remote and rural areas.

One of the more pervasive but intractable problems is "technophobia,"- the fear of technology. Women often have complex relationships with technology and machines. As a result of differential socialization experience, women believe that machines and technology is a man's domain and that it is not for women and girls. This generates a gender bias in attitudes towards studying or using information

technology. The social factors that produce the gender differences operate in both institutional and informal settings.

Women tend to be concentrated in end user, lower skilled IT jobs and make up a very tiny minority of managerial maintenance and design personnel. Stereotypical views of women's skills and abilities have made them preferred employees for certain kinds of work even in the IT industry, particularly work related to word processing or data entry. Men are more likely to be found in the high-paying, creative work of software development and design.

For the empowerment of people and liberation from poverty particularly of females, knowledge is a resource that is crucial. In developing countries, improvement in quality of life of people is incomplete without the development towards the empowerment of women whereas in Pakistan, women working in rural areas, besides doing household work also engage in activities to earn their livelihood like handicrafts, weaving of fabrics-baskets and working as vendors. Such women need and deserve programs of poverty alleviation. Because of social responsibilities like taking care of children and family, women cannot easily take up jobs in formal sector where there is lack of infrastructure and thus get no awareness to communication technology. ICTs can create market for their products and services by exposing these women to telecommunication and media services. To access the women and supplying them with tools of ICT is a huge challenge.

Even when the infrastructure is available, even then affordable access in far flung and remote areas is an issue in Pakistan. Expanding public phone lines and Internet access points are examples of providing community access at affordable prices. A barrier in women's use of ICTs for economic empowerment is the lack of community related content in local languages. To address women's needs and demands, relevant tools need to be provided to make ICTs not only useful but also meaningful particularly for women in rural areas. To provide information in spoken and written language, multimedia can be developed. The challenge in this context is to develop content in the languages that are used by the communities..

The answer to all the problems in women's development does not lie only in telecommunications. Nevertheless, ICTs can bring new information to women and can unlock new channels of communication.

Decisive and affirmative actions need to be taken at the institutional levels to break the racial and gender barriers so that women's equality in use of telecommunication service can lead to their uplift.

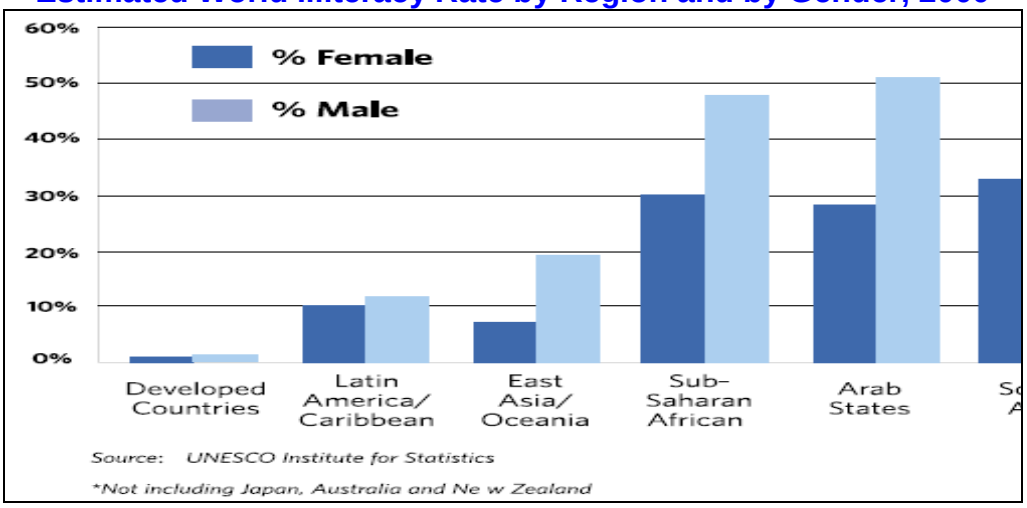
6.3 International evidence on role of ICTs for increasing women status

In 1995, the International conference on women held at Beijing debated issues relating to women in context of ICT. This was the first time when access of women to ICTs was made a concern of gender equality.

A gender unit was established within telecommunication Development Sector (ITU-D) in March 2002 at the World Telecommunication Development Conference. The responsibility of the unit was to mainstream gender issues throughout the organization's work and convert its task force on gender issues into a permanent working group of ITU-D.

Telecommunications enables people to communicate without borders. It changes quality of their lives, when it enables them to get information and share their knowledge.

Figure-6.1
Estimated World Illiteracy Rate by Region and by Gender, 2000



The world over, women are poorer, less educated and having higher levels of illiteracy than men. They earn less and hold fewer positions of power and decision making in the family, in businesses and in political and public life. These inequalities impact women's ability to benefit equally from the opportunities offered by the information technology and global knowledge of economy and society. Illiteracy rate by region and gender is shown in Figure 6.1.

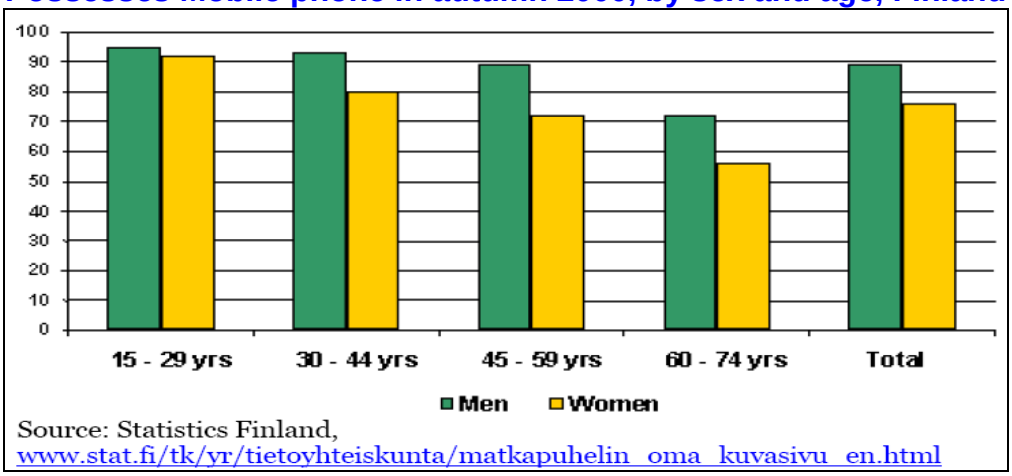
There are distinct gender differentials in the way ICTs are used in developing countries. Use by women of ICTs has been largely confined to e-mail for advocacy and networking activities. The main reasons for this concentration are cost of access and limitations of time, bandwidth, and technical skills. Relatively few women use it for business, for entertainment, or for education related to livelihood and well being of themselves and their families (e.g. health and nutrition education).

6.3.1 Use of Mobile Phone

Statistics Finland[50] provides a breakdown of mobile phone ownership by gender. This is shown in Figure 6.2. Mobile phone ownership tends to be equal between sexes among the young but a gap grows with increase in age.

[50] Gender Issues in Online Communications- by Hoai-An Truong, Gail Williams, Judi Clark and Anna Couey, Finland

Figure-6.2
Possesses Mobile phone in autumn 2000, by sex and age, Finland

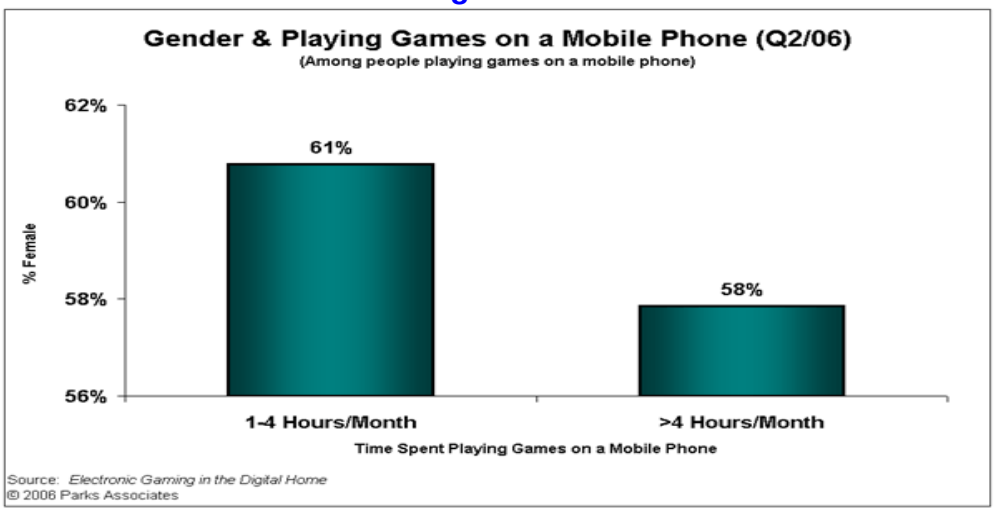


Source: Statistics Finland,
www.stat.fi/tk/yr/tietoyhteiskunta/matkapuhelin_oma_kuvasivu_en.html

According to a study[51], women represent 59% of all U.S. consumers who play games on mobile phone. Furthermore, as shown in the Figure 6.3, women comprise 61% of all those playing mobile phone games 1-4 hours per month and 58% of all those playing for more than four hours per month.

These results reaffirm the importance both of women in the gaming market and of the industry's efforts to promote casual games for the mobile phone, according to John Barrett, director of research at Parks Associates.

Figure-6.3



6.3.2 ITU Key Gender Indicators

The ITU has defined[52] Key gender indicators of the telecommunications/ ICT sector as shown in Table 6.1.

[51] Cellular News-3rd July 2006

[52] Joint UNECE/UNCTAD/UIS/ITU/OECD/EUROSTAT Statistical Workshop: Monitoring the Information Society: Data, Measurement and Methods (Geneva, 8-9 December 2003)

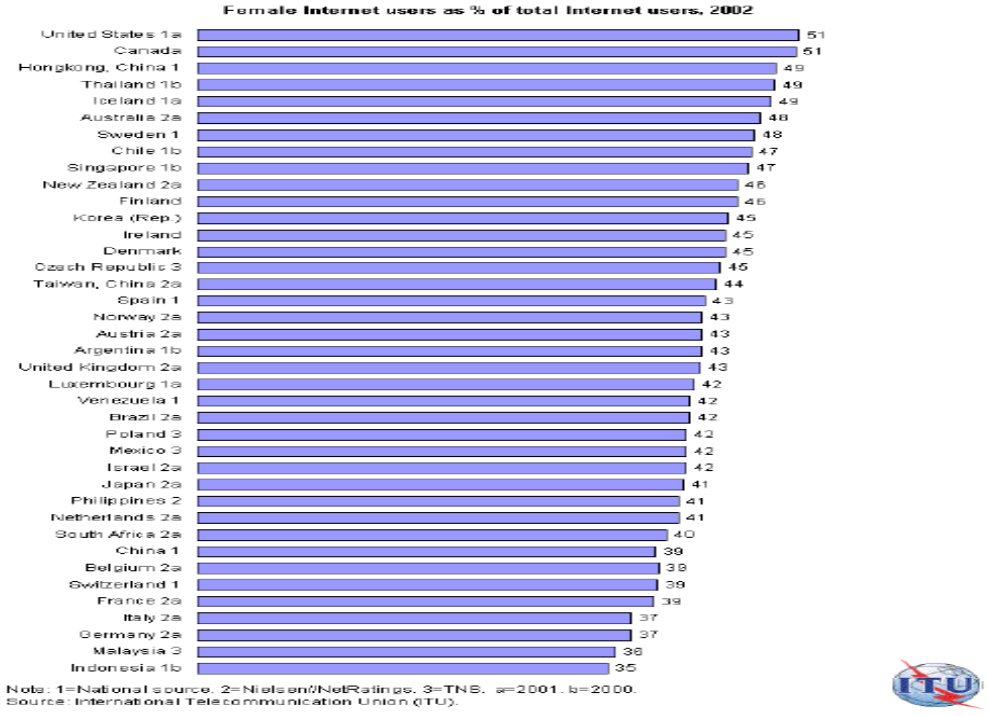
Table-6.1
ITU Key Gender Indicators of Telecommunication /ICT Sector

S/N	Female Internet Users	Share of Female Users	Percent
1	Percent female Internet users	Share of females in the total number of Internet users. This is calculated by dividing the number of female Internet users by the total number of Internet users.	16.1
2	Female Internet users as percent of female population	Share of female Internet users in the total number of females. This is calculated by dividing the number of female Internet users by the total number of females.	16.2

The Figure-6.4 shows ITU data on female Internet use for 39 countries from three sources (national, Neilsen/Net and TNS). Unfortunately, scarce data is available regarding female Internet use in developing countries. Surprisingly, the list is heavily weighted towards wealthy countries. It does not contain India, which is an important case as user of ICTs by women.

The United Nations Millennium Development Goals monitoring report presents a database that has also included female Internet users as a percentage of total Internet users.

Figure-6.4
Female Internet users as percent of total Internet users, 2002



6.3.3 Percent of Women Using Internet in Various Countries of the World

An important telecommunication indicator that presents data disaggregated by sex is the Internet usage. Available data indicates that women are conspicuously absent from decision making structure in information technology in both developed and developing countries. A few examples[53] of gender differential on internal use from statistics for Australia and some other Asian countries are discussed as under:

- **Australia:** According to the Australian government in May 2000 (http://www.noie.gov.au/) 45 percent of Internet users were women. The NeilsenNet puts the figure at 48 percent in 2002.
- **China:** According to CNNIC (http://www.cnnic.net/) in 2001, the number of Internet users in China increased from 10,000 in 1999 to 22,500,000 in 2001. The gender differentials of Internet users were large with men at 79 percent and women at 21 percent in July 1999. By 2001, CCNIC data shows a figure of women Internet users at 39.8 percent. The proportion of men and women using the Internet showed that there were more men who were heavy users by the ratio of 65:35, and more women who were light users with proportion of 49:51.
- **Hong Kong:** Netvalue's research for September 2000 shows men being heavy users as`men outnumber women by 58 to 42 percent, while women are light users and outnumber men by 38 to 62 percent. More women in Hong Kong were using the Internet as compared to women in Taiwan, Singapore and South Korea. By 2002 NielsenNet put the figure of women users at 45 percent.
- **India:** According to NASSCOM (National Association of Software and Service Companies - in June-July 2000, the number of Internet users in India were 3,700,000, and the proportion of males to females was 77:23. The percentage of women users increased as compared to 18 percent in June 1999 (APWINC). http://www.women.or.kr/apwin/www.nasscom.org)
- **Indonesia:** In 2001, according to APJII (Indonesian Association of Internet Service Providers-http://www.apjji.or.id) twenty percent of Internet users were women. The number of Internet users in Indonesia was 4 million people (0.715 percent of the population) which may be considered as very low.
- **Korea:** According to the survey conducted by Internet Matrix and KRNIC (Korea Network Information Centre, March 2001), the proportion of males to females was 57.1:42.9 indicating women's ratio was lower than men's. However, with regards to the figures of 33.1 percent in October 1999, and 43.2 percent in December 2000, the gap had lessened. In September 2000, NetValue found that the Korean Internet heavy users proportion of males to females was 64:36. On the other

[53] ITU-Document WGGI-2/7-E-20 June 2003

hand, women predominated among light users at 44:56. By 2002 Neilsen put the figure of women users at 47 percent.

- **Thailand:** NECTEC, a specialised national centre under government auspices, carried out three annual Internet user surveys, with sex disaggregated data. Data showed that women had slightly exceeded the parity.

One area where disaggregated ICT statistics are available for larger countries is Internet penetration. For example, the China Internet Network Information Centre

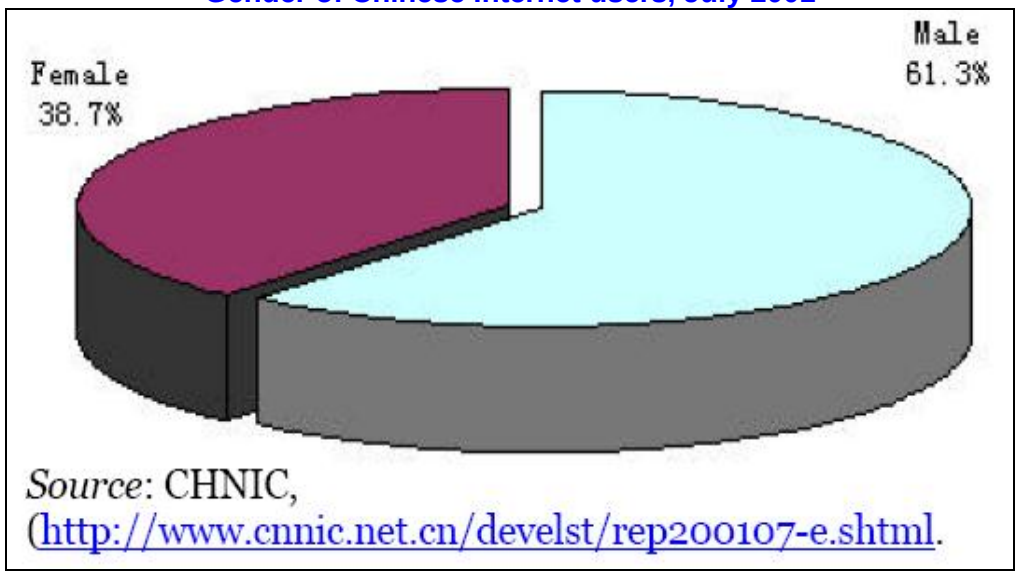
(CHNIC) compiles a breakdown of Chinese Internet users by sex every six months[54]. This information is shown in the Figure 6.5. Nielsen, the market research firm, also provides a breakdown of Internet users by sex. Table-6.2, presents information on female internet users for selected countries of the world.

Table-6.2
Female composition of Internet users; using Internet at home, May 2001

Country	% Female
USA	52
Canada	51
Australia	48
New Zealand	46
Finland	46
South Korea	45
Sweden	45
Denmark	45
Ireland	45
Hong Kong	44
Norway	43
Singapore	42
Brazil	42
Taiwan	41
UK	41
Netherlands	41
Spain	40
France	39
Germany	37
Italy	37
Source: Nielsen//NetRatings http://www.eratings.com/news/20010628.htm	

[54] ITU-3rd World Telecommunication/ICT Indicators Meeting-Geneva, 15 - 17 January 2003

Figure-6.5
Gender of Chinese Internet users, July 2001



6.3.4 Internet Usage and Purposes of Use

European Union's Community carried out a survey on ICT usage in 2002[55]. Table 6.3 shows the gender gaps, calculated as the difference between % of men and % of women using Internet. It suggests that women in the EU countries use the Internet with less frequency and regularity than men.

Table-6.3
Gender Gaps on ICT Access and Use in the European Union*

ACCESS to Internet		Gender Gap (Percent)
At Home	daily in the last 3 months	6.1
	at least once a week in the last 3 months	3.1
At Work	daily in the last 3 months	5.1
	at least once a week in the last 3 months	1.1

Source: 2002 Eurostat Pilot Survey on ICT Usage in Households
* Refers to EU countries and Czech Republic for which data was available.

Survey results for Internet usage given in Table-6.3 shows that women use Internet less frequently than men in both home and workplace. Data on the percentage of women and men who accessed the Internet daily at home showed on average a difference of 6.1%. This difference fell to 3.1% for weekly home usage and to a negative difference of 1.2% for monthly use. The same occurred in the workplace where the average difference between the percentage of women and men for daily Internet use stood at 5.1%, but fell to 1.1% for weekly workplace use reaching almost parity for monthly use.

[55] Monitoring the Information Society: Data, Measurement and Methods (Geneva, 8-9 December 2003)

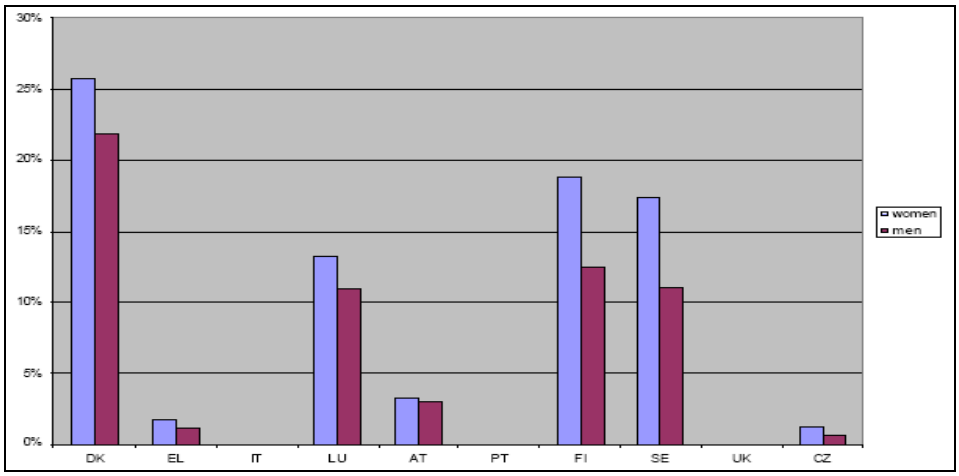
The survey also included questions on purposes of Internet use. The uses were categorized in terms of:

- communication purposes i.e. sending e-mail;
- information research and online services;
- purchases of goods and services, banking;
- interaction with public authorities.

The percentage of men using the Internet for these purposes exceeded percentage of women using Internet for nearly all of the listed users. Areas of Internet usage that appeared to be particularly male-dominated were communications, watching web-television, games and music, reading newspapers and purchasing. In Sweden, the prevalence of women who used the Internet to listen radio or watch web-television (8%) was less than half of the prevalence of men (19%) and the prevalence of men who used Internet for games and music was considerably higher, 40% compared with the same prevalence for women, 27%. In Denmark the gender difference was consistent in the use of Internet to read newspapers. Only 19% of women used Internet for this purpose compared with the 32% of men. In one area, however, where the trend was reversed: the use of related to health. Figure 6.6 shows that in countries such as Denmark, Luxembourg, Finland and Sweden, the percentage of women who used the Internet for this purpose were 4%, 2%, 6% and 6% respectively more than men (Figure-6.6).

Figure-6.6

Percent Women and Men Using Internet for Health-Related Services



6.3.5 Gender Differentials in entrepreneurs in US and Japan

In many developing countries female entrepreneurs increasingly dominate small and micro-enterprises. The women are often aware that increased connectivity, computerization, and communications can enhance their productivity. Yet, it is often difficult for women to gain access to communications technology because of the obstacles they face in financing the investment.

If small businesses are the heart of the US economy[56], then women/ minority-owned small businesses are the pulse. Women have been starting their own businesses at a significantly higher rate than men and women business owners differ from their male counterparts in how they manage, make decisions, select vendors, and utilize credit. Similar to case of the U.S., the business environment in Japan over recent years has also been drastically changing due to the internationalization of Japan's economy. In this changing environment, women are starting to play a significant role. As a critical knowledge-based workforce component Japan has emerged as the world's second largest economy in Gross Domestic Product (GDP) terms[57] (Table-6.4).

Table-6.4
World's Largest Economy GDP

Rank	Country	GDP / Sales (US$ Trillion
1	United States	$8.7
2	Japan	$4.4

Driven by a desire for independence, flexibility and a multitude of other reasons, Japanese women have started their own businesses at twice the rate of businesses initiated by Japanese men. The three potential reasons that explain this trend are as under:

- Japanese women have little obligation to provide financial support to their families. Women have a subdued social expectation in the traditional Japanese economic system. This secondary societal position gives women an advantage in taking risks and taking on new challenges.
- Women are the majority portion of the consumers in Japan. Women can understand consumers' needs and get business ideas from their daily lives.
- Advances in technology, such as the pervasive use of Internet and Mobile Internet services in Japan have also made it possible for Japanese women to manage both career and family.

6.3.6 Situation in India and Bangladesh

In India, Self Employed Women Association (SEWA) has done extensive work in assisting women in rural area and has established an ICT program to increase efficiency of rural micro enterprise activities. By developing public access centres like public phones, information centres (cyber cafes), telecenters, libraries etc. access of remote areas to telecommunication service has increased. Telecenters have been established in institutions like health-centres, community

[56] The Insight Research Corporation- Small Business Telecom: Opportunities in the Women- and Minority-Owned Small Business Marketplace info@insight-corp.com

[57] Women Entrepreneurship, 2007 Volume 10, Issue 1 -There are indications of global changes in venture businesses in Japan by Charla Griffy-Brown, PhD and Noriko Oakland Graziadio

centres and schools. In India, a knowledge centre project undertaken by M.S. Swami Nathan Research Foundation has connected four villages in Pondicherry with local information database in Tamil Nadu. This has helped in improving agricultural practices. Also medical facilities have improved.

Case Study-6.1
Bangladesh Grameen Bank–Case study for women empowerment

In Bangladesh, Grameen Bank had initiated a Village Program (VP) to provide economic assistance to poor villagers. Women were the main target group in rural areas. They were provided with small loans without collateral. This was intended to generate income. For social and economic development in rural Bangladesh, a telecommunication network, Grameen Telecom was established to enable villagers to get information about business and market. In 1997, this network initiated the use of Mobile for empowering the rural poor, at the time when Mobile was an unusual thing to posses. Grameen Bank provides loans to women who are members of its microcredit program to purchase Mobiles. By making and receiving phone calls, these operators provide telephone service; hence earn revenue to repay the loan taken from Grameen Bank. There is a sister company, Grameen Phone, which sells airtime to Grameen Telecommunication in bulk. It charges a discounted rate on airtime used.

Village Program has helped poor rural women in gaining economic independence.

Source: TEACH

It may also be noted that in Bangladesh a woman's home provides a space that is acceptable for other village women to access. During a survey, it was revealed that when women are VP operators, women Grameen Bank members feel comfortable using a phone. This increases more equitable access to phone services for women. From the standpoint of revenue generation and profitability, it is also important to ensure that the Village Phone is fully accessible to the entire village population. It was also observed that where Village Phones were operated by men, only 6.25% of Grameen Bank member phone users were women. In comparison, where the operators were female, 82% of the Grameen Bank member phone users were women[58].

6.3.7 Pakistan situation relative to other Countries

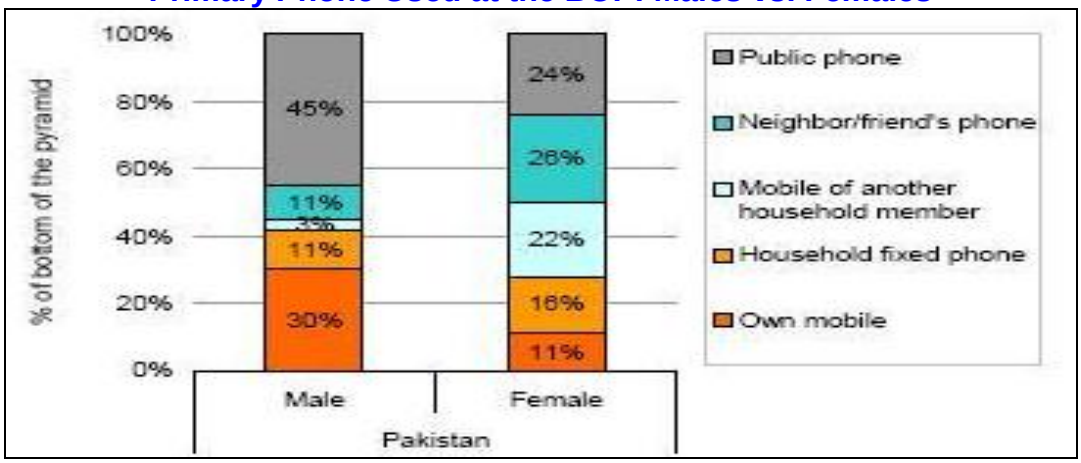
A study[59], 'Teleuse at the Bottom of the Pyramid' (T@BOP) was conducted in Pakistan, India, Philippines, Sri Lanka & Thailand. The survey had a sample of 8,689. The study looked at the use of telephones among the lower socio-economic strata, within each country; it looked at what kinds of phones people were using and what benefits they had obtained from the use of phone. It had also ascertained the perspectives of the non-owning user and issues relating to getting

[58] Canadian International Development Agency- info@telecommons.com
[59] State of Telecom Industry in Pakistan-The Gender Divide In Pakistan Telecom, Chief Editor: Babar Bhatti-Published on June 22, 2007

and staying connected. The fieldwork was conducted by AC Nielsen affiliates in the respective countries during July and August of 2006; the study was funded by the International Development Research Centre (IDRC), Canada.

The study by Sri Lanka based research organization (LIRNEasia) presents an analysis regarding telecommunication use at the "Bottom of the Pyramid" (BOP) in five countries. It shows that mobile ownership at the BOP in Pakistan was found to be as high as 23%. Despite having the lowest per capita GDP among the countries studied, Pakistan had scored better than both its South Asian counterparts Sri Lanka and India on this count, with mobile ownership at the BOP in these countries at 22 and 9 percent, respectively. Almost 66% of these mobile connections had been taken up in the preceding year (i.e., since mid-2005). According to the report, men appear to have more access to mobiles and public phones (including telecommunication centers, public pay phone booths, etc.) than females. Individually owned mobiles were used as the primary phone (most frequently used) by 30% of males, but only 11% of females as shown in Figure 6.7.

Figure-6.7
Primary Phone Used at the BOP: Males vs. Females



Public phones were found being used as the primary phone by 45% of males versus 24% by females. Among females, the preferred primary phone (48%) was either a neighbour or friend's phone or another household member's mobile phone (compared to 13% of males). A similar, but less pronounced pattern was seen in India, but not in any of the other countries studied. In addition, phone ownership was lower among females (29%) as compared with males (43%); such sharp differences were not seen in the other four countries.

Significant gender differences were also seen in the use of telephones at the BOP, in terms of number of calls made. Pakistan was the only country in the study where men made and received significantly more calls than women at the BOP and used more minutes per month; on average, men made 18 calls per month and received 25, while women made 10 and received 15 calls. These differences contrast with much of the existing research, based on small-sample

studies in affluent developed countries; these studies generally conclude that women use telephones more than men.

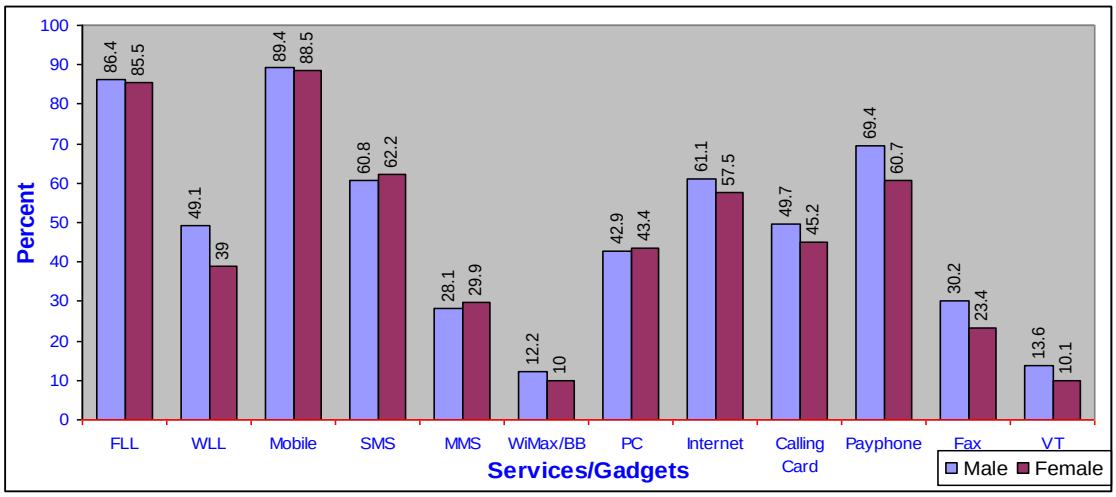
6.4 Findings of TEACH survey on Gender

The gender related findings of non-targeted survey for males and females on the selected use of telecommunication services is discussed in this section. The gender findings of household respondents from the targeted survey were presented in Chapter 5 of Volume-II of this report.

6.4.1 Findings about Knowledge about Telecommunication Services and Gadgets

The knowledge about telecommunication services and gadgets is depicted in Figure 6.8.

Figure-6.8
Knowledge about Telecommunication Services by Gender, Pakistan, 2008



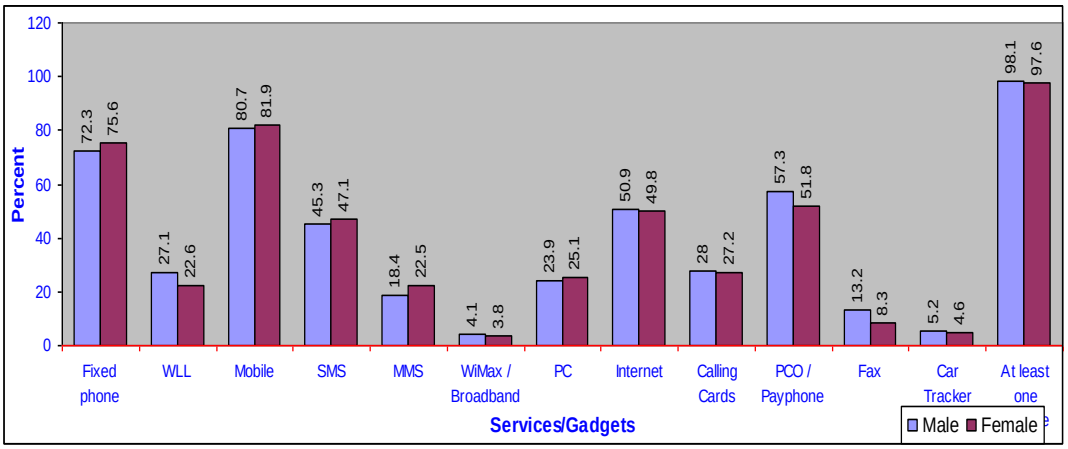
Source: Annex Table 3.4

The knowledge about fixed phone, mobile phone, SMS / MMS, PC is similar among males and females. The knowledge of Wireless Local Loop is reported at 49 percent among males and at 39 percent among females. The knowledge of WiMax and Broadband is reported at 12 percent by males and at 10 percent by females. About three-fifths (61 percent) of males and (58 percent) of females respondents have the knowledge of Internet. Knowledge of Calling card is reported higher (50 percent) by males than females (45 percent). The knowledge of Public Call Office (PCO)/Payphone is also reported higher (69 percent) by males than females (61 percent). Similar pattern prevails about the knowledge of Fax and for Car Tracker service.

6.4.2 Findings on Usage about Telecommunication Services and Gadgets

Use by males and females of at least one of the telecommunication services is a similar. 98.1 percent of males and 97.6 percent of females have reported using at least one of the telecommunication services. The use of telecommunication services and gadgets by male and female is depicted in Figure 6.9.

Figure-6.9
Usage about Telecommunication Services by Gender, Pakistan, 2008



Source: Annex Table 3.6

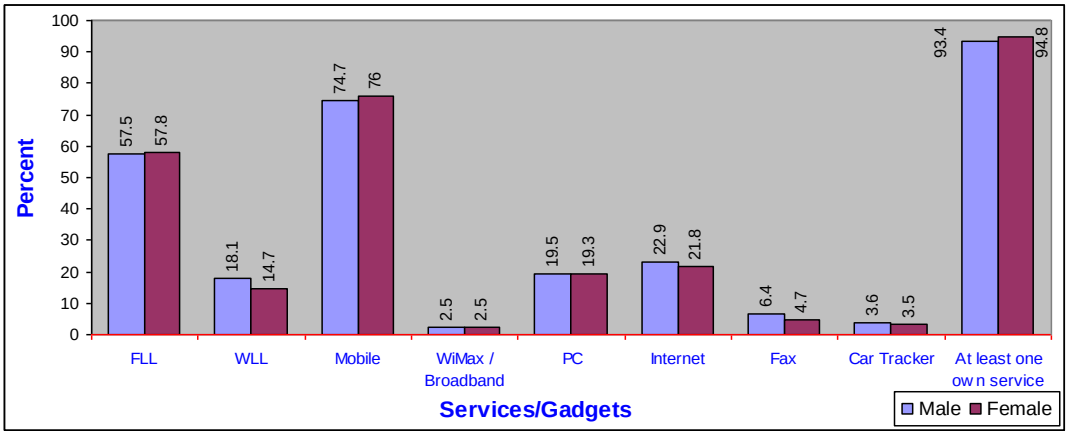
Females make use more of FLL, Mobile, SMS / MMS and PC than males. The use of WiMax/Broadband Internet is reported by 60 percent of males and 50 percent of females. Regarding the 'Calling Cards and Car Tracker use, this proportion of males and females using the facilities are similar.

The usage of PCO/Payphone is reported higher by males (57 percent) than females (52 percent), WLL and Fax is reported to be used higher by males (27 percent and 13 percent) as compared to females (23 percent and 8 percent) respectively.

6.4.3 Findings on Owning Telecommunication Services and Gadgets

The findings about owning telecommunication services/gadgets are shown in Figure 9.10. The figure shows that except for WLL & Fax most of the telecommunication services/ gadgets are equally owned by males and females.

Figure-6.10
Owning of Telecommunication Services by Gender, Pakistan, 2008



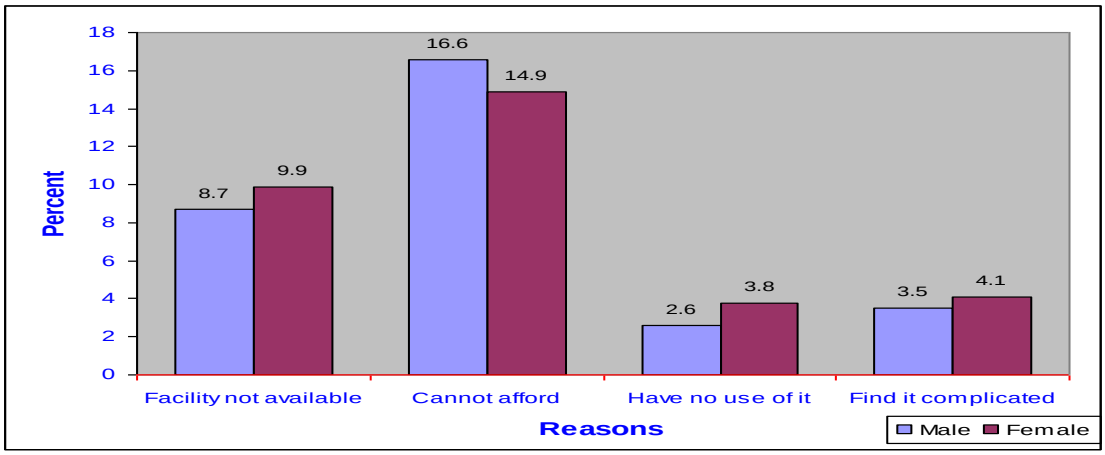
Source: Annex Table 3.7(a)

6.4.4 Reasons for Not Having Telecommunication Services

6.4.4.1 FLL/WLL

Reasons for not having FLL /WLL are shown in Figure 6.11.

Figure-6.11
Reasons for not having FLL/WLL by Gender, Pakistan, 2008



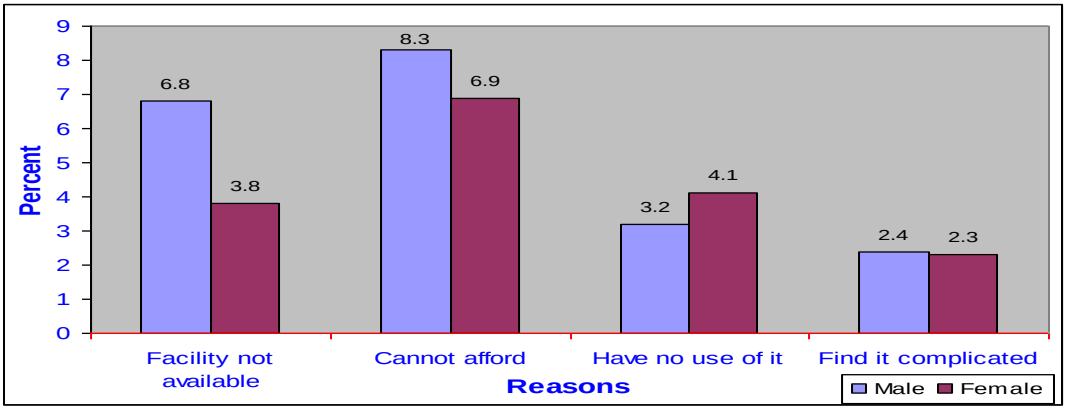
Source: Annex Table 3.8(a)

Nine percent of males and 10 percent of females reported the reason for not having FLL/WLL was 'facility not available'. About 17 percent males and 15 percent of females reported that the said services were not affordable whereas 3 percent of males and 4 percent of females reported that said services were not useful for them. Around 3 percent of males and 4 percent of females found these services complicated to be used.

6.4.4.2 Mobile

Seven percent of males and 4 percent of females reported that facility of mobile was not available to them. The reason "cannot afford" was reported by 8 percent males and 7 percent of females. 3 percent of males and 4 percent of females stated it was not useful for them. Almost 2 percent of males and females found its use complicated. The reasons given by the respondents are shown in Figure 6.12.

Figure-6.12
Reasons for not having Mobile Phone by Gender, Pakistan, 2008

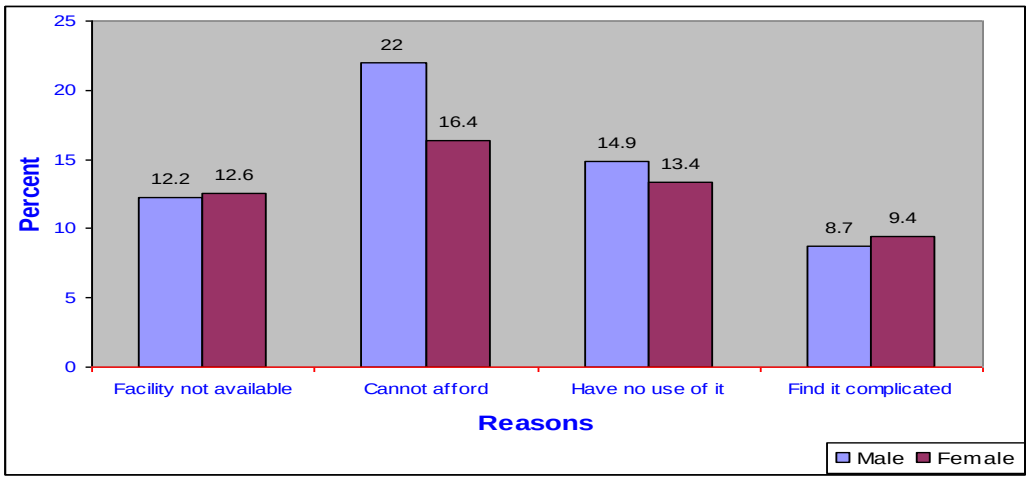


Source: Annex Table 3.9(a).

6.4.4.3 Internet

Less than one-quarter (22 percent) of males and one-sixth (16 percent) of females responded that they cannot afford Internet. Fifteen percent of males and 13 percent of females reported that they had no use for it while 9 percent of males and females reported its use was complicated for them. The details are given in Figure 6.13.

Figure-6.13
Reasons for not having Internet Facility by Gender, Pakistan, 2008

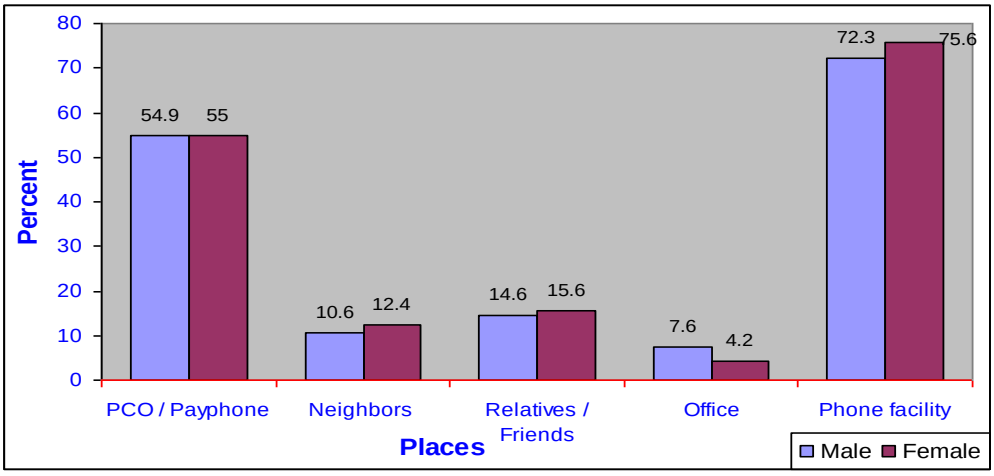


Source: Annex Table 3.10(a)

6.4.5 Places Where Phone Facility Used

The various places where phone facilities are used by the respondents are depicted in Figure 6.14.

Figure-6.14
Places where Phone Facility used by Gender, Pakistan, 2008



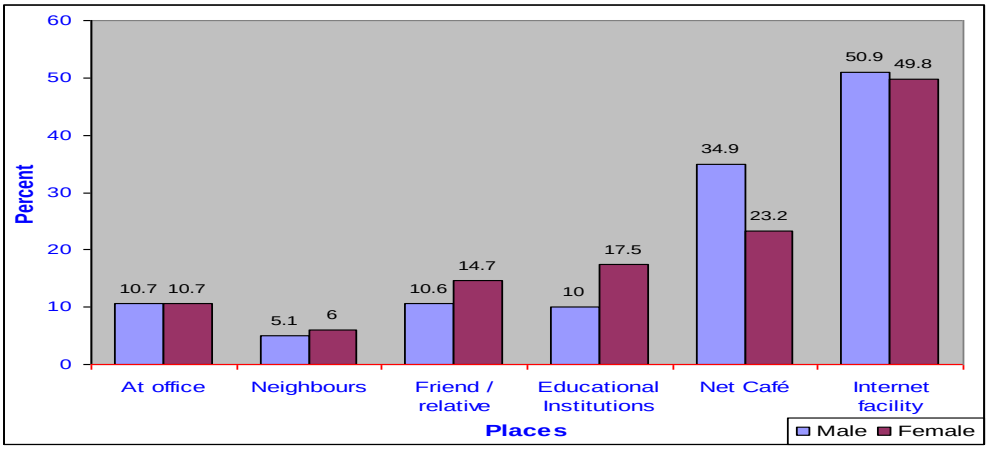
Source: Annex Table 3.11(a

Equal proportion of males and females (55 percent) reported using PCO/Payphone. Neighbours and facility provided by relatives were availed more by females than by males. Twice the proportion of males (8 percent) than females (4 percent) had used office facility for making the phone calls.

6.4.5.1 Findings of places where Internet Facility used

An equal proportion of males and females use official facility for Internet, neighbours facility was used by 5 percent of males and 6 percent of females, 'friend/relative's place for Internet were used by 11 percent of males and 15 percent of females. The facility of educational institutions was used more by females (18 percent) than males (10 percent). Regarding 'Net Café', it is used by 35 percent of males and 23 percent of females Figure 6.15 shows the information.

Figure-6.15
Places where Internet Facility used by Gender, Pakistan, 2008

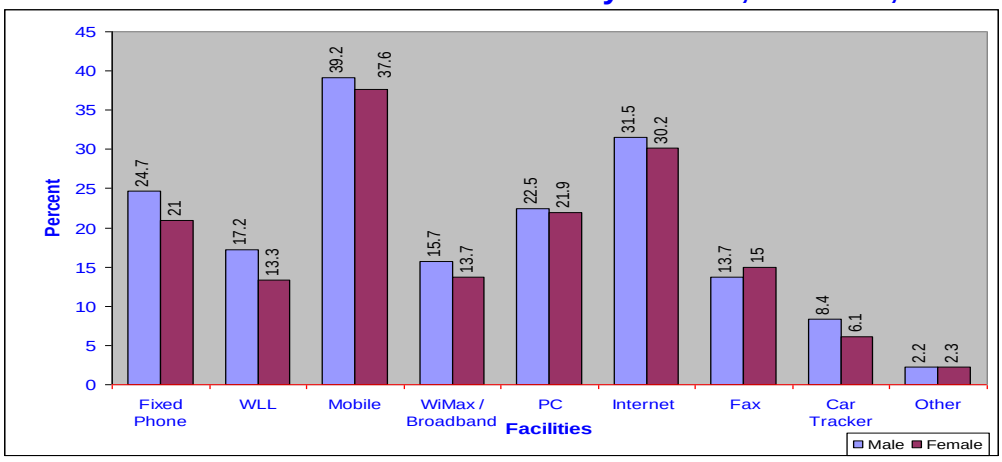


Source: Annex Table 3.12(a).

6.4.6 Desire for Owning Telecommunication Facilities in Future

As shown in Figure-16, about 14 percent of males and 16 percent of females wanted to have FLL in future; desire for use of WLL was reported by 17 percent of males and 13 percent of females. About two-fifths; 39 percent of males and 37 percent of females desired to have mobile phone, 16 percent of males and 14 percent of females desired to have 'WiMax and Broadband'. An equal proportion (22 percent) of males and females wanted to have PC and Internet and Fax which is reported 22 percent and 31 percent and 14 percent respectively.

Figure-6.16
Facilities would like to own in future by Gender, Pakistan, 2008



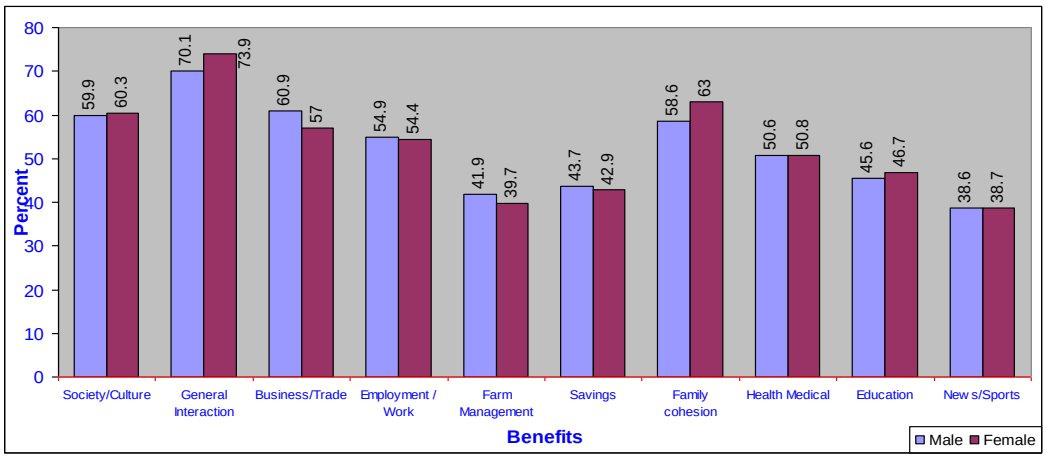
Source: Annex Table 3.14(a).

6.4.7 Benefits of Telecommunication Services

6.4.7.1 FLL/ WLL

The benefits of Fixed Phone / WLL reported by respondents are given in Figure 9.17.

Figure-6.17
Benefits of FLL/WLL by Gender, Pakistan, 2008



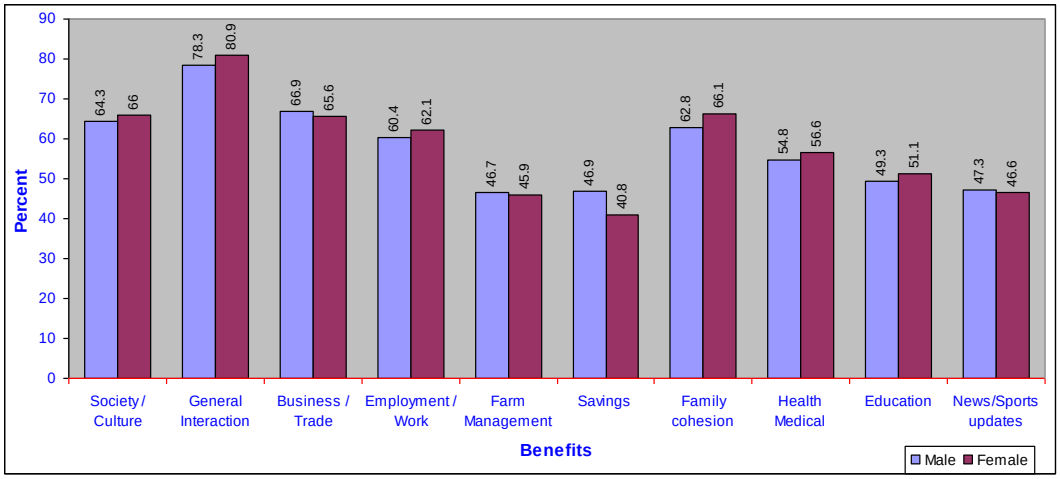
Source: Annex Table 3.14(a).

Social/cultural, employment/work, medical/health, savings, education and news/sports update like benefits were reported equally by males and females and the benefit of 'general interaction' and family cohesion were reported higher by females than males. The benefit in 'Business/trade' was reported higher (61 percent) by males than females (57 percent). Regarding the benefit in 'Farm management', it is stated by 42 percent of males and 40 percent of females.

6.4.7.2 Findings for Benefits of Mobile Phone

The benefits of mobile phone are given in the Figure 6.18.

Figure-6.18
Benefits of Mobile Phone by Gender, Pakistan, 2008



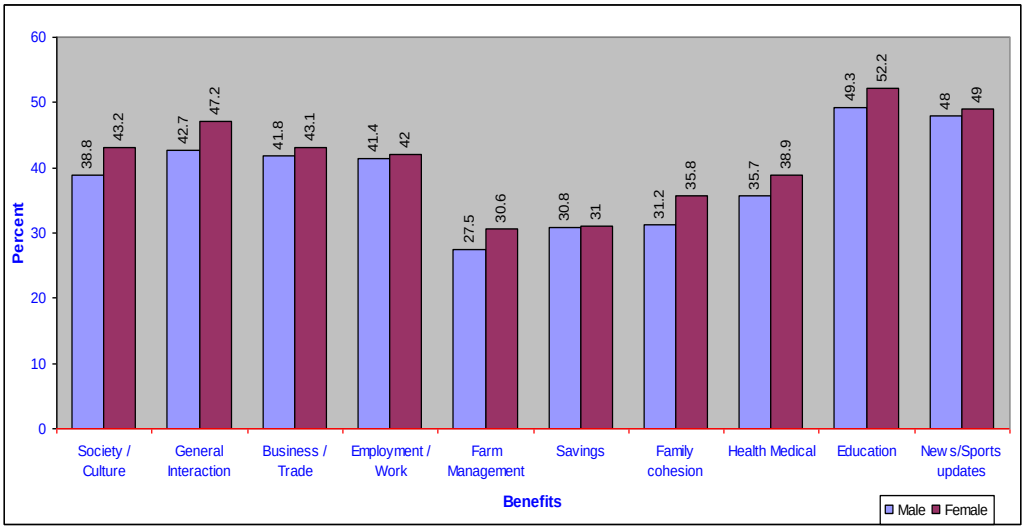
Source: Annex Table 3.15(a).

It was found that social/cultural, general interaction, employment/ work, family cohesion and educational benefits were reported slightly higher by females than males. The remaining such as savings, farm management, business/ trade and sports/ news updates were reported more by males than females.

6.4.7.3 Findings for Benefits of Internet

'Social/cultural', general interaction, business/ trade, farm management, health/ medical, education, Sports and family cohesion benefits were reported higher by female Internet users than male Internet users. Employment/ work and savings benefits were found useful by almost equal proportion by males and females. Figure-6.19 shows the distribution of perceived benefits of Internet:

Figure-6.19
Benefits of Internet by Gender, Pakistan, 2008



Source: Annex Table 3.14(a).

The Internet technology may be more beneficial but the language of Internet excludes a huge population from using it. Moreover, its contents are also not related to the lives of Pakistani women. To promote the use of Internet in Pakistan, women must be given an opportunity to represent their own voices, share their experiences and knowledge and express their viewpoints on the web.

Chapter-7

Telecommunication Indicators and Forecasting

7.1 Introduction

In Pakistan the telecom sector have reflected positive but slow growth during the last financial year. As a matter of fact this sector is emerging as one of the most potentially lucrative and promising sectors of Pakistan's economy. It is likely to bring in substantial revenues, foreign direct investment and would create new job opportunities for the youth.

In the year 2007-08, the gross investment in the telecom sector during financial year 2007-08 stood at US $3.1 billion as compared to that of US$ 3.9 billion recorded in the previous fiscal year. The Foreign Direct Investment (FDI) in the telecom sector during 2007-08 remained at US $1.4 billion, which is about 30% of the total FDI in the country. During 2007-08, the telecom sector is second after financial sector as major recipient of FDI in the country.

The boom in the telecom sector has positively affected business and economy of Pakistan. The users of telecom services have become conscious of the value of these services in the changing business environment. Once seen as luxury items, mobile communications have become a necessity. These services reduced information asymmetries and have become essential for small and large businesses alike. People have become more connected through these services than ever before. Nearly all kind of businesses and commerce are being benefited through the use of these services. Along with the induction of new trends in existing businesses a lot of new businesses have been started due to the availability of telecom services. These have provided easy access to every one. For examples, mobile handset business became very popular and a complete new setup came into existence. Many more businesses like call centers, telecenters & VOIP are all progressing and running due to the rapid innovation of telecom services. This contributes towards job creation and enhanced economic activity. All these businesses are helping in the improvement of Pakistani economy and Pakistan is attracting foreign investors due to the boom in telecom sector.

7.1.1 Fixed Line Local Loop

There is a considerable increase in all telecom services. FLL has not been increasing at a fast pace. Although in the recent years a set back has been seen in the FLL but it is believed that with a premier quality of service fixed line will keep on playing an important role in Pakistan’s business & economy. Almost all the other telecom service providers rely on FLL, for example cellular companies use fixed line for communication between towers if an alternative is not available (Microwave link). Also IP based solution for GSM towers is being proposed through which they will be directly linked with Master Switching Centers thus saving deployment and hardware cost.

FLL primarily will serve as the major backbone of the existing Internet broadband technology and new streams such as Smart TV recently launched by PTCL.

7.1.2 Wireless Local Loop

The demand for WLL will be important in areas where fixed line services are not feasible such as rural/Northern Areas. Moreover, WLL sets and connection require one time payment and maintenance charges are negligible. The geographic landscape of Pakistan makes WLL a viable option and in turn connects people in far off locations. Lower operating frequency band for WLL means less signal distortion and excellent choice for Northern areas of Pakistan where FLL service and deployment are not feasible.

WLL frequency spectrum fetched Rs.14.121 billion for the national kitty that shows investors' eagerness to invest in Pakistan's growing telecom market and optimism over the ongoing economic reforms in the country. The most sought after spectrum was 1.9 GHz that fetched Rs.11.3 billion nearly about 82 per cent of the total auction proceeds.

WLL, a service of its kind that was launched with the unique consideration of providing freedom of wireless and affordability to the people at large. The philosophy of starting from the rural areas and then reaching the urban ones was to make the rural areas more resourceful so that they could play their due role in the development momentum of the country. When other companies start to offer WLL services, phone call charges as well as method of connectivity will change in the country. The developing countries have a great potential for telecom growth owing to relative low teledensity. The time and cost required for increasing total telecom capacity through fixed lines is high. Wireless medium has been a preferred option globally for network expansion.

Low cost solutions like WLL have a great potential to penetrate in the rural areas along with a major hold in the urban areas. The subscriber base of WLL service providing both nationwide and international dialing facilities at PTCL landline telephone rates has reached more than 2 million by 2008 and contribute billions of rupees for the telecom industry. More action is expected in the coming year in WLL sector which promise the option of lower tariff, improved services and innovative technology.

7.1.3 Internet & Broadband

Broadband technology will potentially allow users to download more information, including new multimedia applications, streaming news, music, games, video conferencing, telephony applications, and eventually video programming similar to current television and cable services.

Digital Subscriber Line (DSL): DSL remains one of the prime providers for broadband data access. To name a few service providers such as Micronet, Link

Dot Net and Nayatel are popular in urban areas and in larger cities. However PTCL remains the largest broadband service provider, mainly because of its lower rates. Emerging broadband solutions such as wireless WIMAX and fiber optic based FTTH have had a difficult time competing against PTCL due to its lower rates.

WIMAX: It is a relatively new standards-based wireless technology which is intended for large coverage areas on the order of several kilometers (instead of a few hundred meters, as is the case with (Wi-Fi) with base stations transmitting signals and some equipment at customer location, it promises fast bandwidth for both fixed locations and mobile users. In this backdrop, Pakistan made headlines in 2006 when Wateen announced plans to work with Motorola to rollout mobile WiMax, the largest network of its kind in the world.

Fiber To The Home: FTTH in Pakistan is being provided by Nayatel, an independent telecom operator in Pakistan. It is currently installing a fiber to the home (FTTH) project in the city of Islamabad. The project would deliver ultra broadband data and Internet, next generation voice services, and Cable TV to the home and to corporate customers. The first phase of the project has been tested and commissioned.

Alcatel has been selected by Nayatel to supply the fiber-to-the-home (FTTH) solution to deliver a full range of high bandwidth triple play (voice, video and data) services to over 30,000 subscribers in the capital city of Islamabad.

7.2 Indicators forecasting

The findings of survey, among other things, brings out that many more households and businesses would like to own and make use of telecommunication facilities. Even some of those who are enjoying the facilities would like to take benefit of additional services. Based on the analysis of findings, growth of future potential demand has been worked out in respect of important services.

7.2.1 Fixed Local Loop (FLL)

The data from each of the three categories of survey depicts that there is still demand for FLL phones. Analysis of data in respect of 10,000 respondents in non-targeted survey, shows that 29 percent of them will like to own FLL phone in future. In the household survey of 4000 respondents, 14 percent indicated the intention to have such a facility in future. As part of business survey 1000 respondents were interviewed, 19 percent of whom expressed intention to own a FLL phone. Econometric model (logistic regression) studies of survey data was carried out which confirms the existence of demand. The demand is more in higher income groups. Actual data about number of FLL phone connections and registered demand has also been examined. It shows a mixed performance. On one side the number of working connections is declining while on the other side applications for new connection are being received regularly. It is believed by experts that if customer service is improved, the declining trend will be reversed.

The number of households in Pakistan is estimated to be 21.7 million and according to survey of households wanting to have a FLL phone is 14 percent. With these figures, the demand for FLL phone works out to be 3.05 million. Table 7.1 provide year wise projection based on this forecast.

Table-7.1
Subscribers Projections of FLL/WLL Phone, Pakistan, 2007/08-2017/18

(Million)

Subscribers	Year-wise Growth Projections									
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
FLL	4.4	4.9	5.3	5.7	6.05	6.4	6.7	7.0	7.25	7.45
WLL	2.7	3.0	3.3	3.5	3.7	3.85	4.0	4.15	4.3	4.4

Source; TEACH Research

7.2.2 Wireless Local Loop (WLL)

WLL service has been started in Pakistan in the recent past. A large number of parties (17) obtained licenses but only few (4) have launched the service. PTCL is by far the biggest operator of WLL service. It has about 1.5 million subscribers out of the 2.3 million connections household survey results show that about 11 percent of households are making use of this service while 7.2 percent of households want to own this facility in future.

The econometric model (logistic regression) shows demand and further shows that as family income increases the future demand for WLL increases. WLL was introduced in 2002-03 and growth data is available only for 5 years which is insufficient for computerised regression analysis. The trend has been extrapolated manually with reducing rate of growth. The result shows 4.4 million WLL subscribers by year 2017-18. In due course, WiMax technology is expected to take over and WLL connections will be substituted by WiMax connectivity. Table-7.1 provides detailed year-wise projections.

7.2.3 Mobile Phone

Growth in mobile phone in Pakistan has been continuing at the rate of about two million connections per month. During the last financial year, an addition of about 25 million took place in the number of subscribers. The main driving force behind the expansion has been the intense competition among the players. In addition, during the last year the purchase of PAKTEL by Chinese CMT Company and the launch of their new brand name, ZONG, added to the intensity of the market drive by the Company. The behaviour in the market has been interesting in the sense that the entry of new player is taken by the existing companies as a

challenge and more and more ingenuity has been introduced in the tariff packages and the products by the operators. The subscriber has benefited in the shape of reduction in price of making a call. Similarly, low price handsets have been introduced which have come within the reach of the low-income people. However, more recently, new challenges are faced by the industry. One is a demand for tight control on the issue of a telephone connection (SIM) to control misuse of Mobile phone by anti-social elements. Process of verification of existing SIMs has resulted in disconnections. Secondly, the new Government in budget 2008-2009 has enhanced rate of GST (tax) on the telephone calls from 10 percent to 21 percent. Rs 250/- has been imposed as additional duty on the Mobile handsets. There is an international economic recession and Pakistan economy has also slowed down. Inflation rate is running high.

An analysis of the growth pattern of previous years show that the number of subscribers added have remained substantial but growth rate is now declining although there is evidence of a large potential demand. In the survey exercise, 75 percent respondents have indicated the ownership and 38.5 percent of household respondents expressed their intent to own a Mobile phone in the future. As there are 21.7 million households, the demand for Mobile works out to be 83.5 million. Considering ten year as gestation period for meeting this demand total number of Mobile phone is expected to be 171.5 million upto June 2018. The econometric model (logistic regression) shows Mobile demand in high income groups. Value of Mobile phone subscribers were also forecasted for ten years using historic figures of subscribers for last eight years. Calculations show nearly same results. However last 7 months of current financial year performance indicate decline in monthly rate of growth of Mobile subscribers in Pakistan.

TEACH had carried out a study named “Socio-Economic Impact of Mobile growth and Indicator Forecasting in Pakistan” in 2007. The rate of growth and projection of number of Mobile subscribers for ten years were prepared which were on conservative side as compared to above mentioned predictions. Keeping in view state of global economy it looks prudent to maintain earlier projections Table-7.2 shows the expected yearly growth of Mobile subscribers up to year 2017-18.

Table-7.2
Mobile Phone Subscribers Projections, Pakistan, 2007/08-2017/18

(Million)

	Years									
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Mobile Subscribers	88	120	128	132	135	138	141	144	146.5	149

Source: TEACH Research

7.2.4 Internet and Broadband

In order to forecast the growth of Internet, data for the last five years of Internet subscribers have been made use of. The number of Internet subscribers increased from 1.6 million in 2002-03 to 3.5 million in 2007-08. On the basis of the past growth trend the number of Internet subscribers is expected to reach the figure 7.0 million in year 2012-13 and 8.7 million in the year 2017-18. The non-targeted survey findings corroborate the existence of pending demand as 31.2 percent of respondents indicated their desire to own Internet in future. The econometric model / logistic regression shows demand for Internet which increases progressively with income increase. Table 7.3 shows the yearly expected figure of Internet connections.

Table-7.3
Internet and Broadband connections Projections, Pakistan, 2007/08-2017/18

(Million)

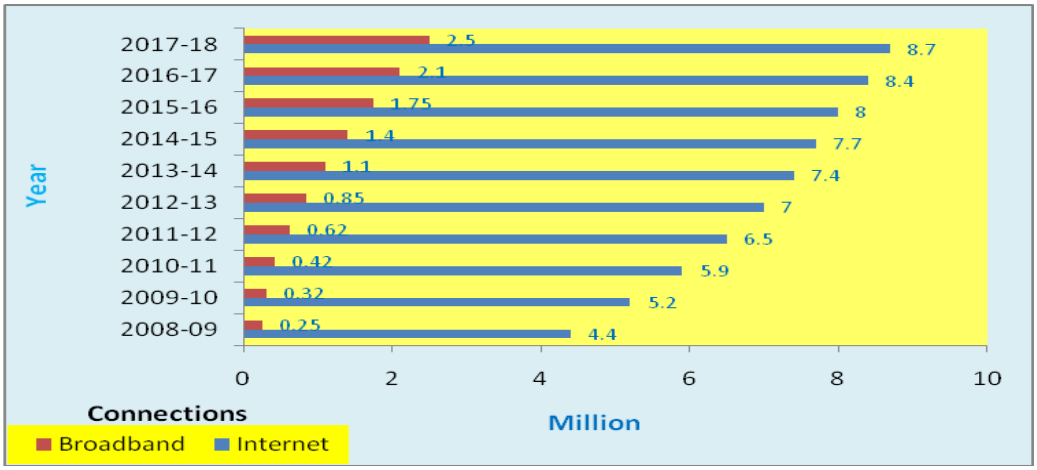
Connections	Years									
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Internet	4.40	5.20	5.90	6.50	7.00	7.40	7.70	8.00	8.40	8.7
Broadband	0.25	0.32	0.42	0.62	0.85	1.10	1.40	1.75	2.10	2.50

Source: TEACH Research

Broadband service is again a recent entry in the Pakistan market. At the moment there are 179,080 subscribers. By the year 2017-18 their number is expected to grow to 2.5 million. Table-7.3 and Figure-7.1 present year-wise broadband projections. The forecast has been arrived at on the basis of comparative study of broadband penetration in the Asia Pacific Region.

According to the data of non-targeted survey, 15 percent respondents like to use broadband/Wimax in future. Broadband is therefore likely to continue to expand because of the demand for high speed connections. New popular services like IPTV, Video on Demand, e-commerce and distance learning etc. are not realizable without the broadband connections. Wireless broadband e.g. WiMax has been launched only recently and in a limited number of cities. The Government plans to subsidize the cost of broadband connectivity in educational institutions through USF which is expected to yield positive results in increasing penetration.

Figure-7.1
Internet and Broadband connections Projections, Pakistan, 2007/08-2017/18



Source: TEACH Research and Table-7.3

7.2.5 PCO / Payphones

Despite down turn in the card operated PCO/Payphone business, the number of PCOs/Payphones have registered an increase. Survey findings reveal use of PCO/Payphone by majority of respondents including those who own a telecom facility. Currently more cellular Mobile and WLL payphones are being added. In the recent past, the government introduced a microcredit scheme to finance the purchase of such payphones. Payphones are popular among the masses particularly in low income groups and in the rural areas. Historic data about number of PCOs/Payphones from year 1995/96 to 2007/08 has been used for regression analysis to forecast future demand of PCOs/Payphones. Table-7.4 presents yearly figures of number of PCOs/Payphones, upto year 2017-18.

Table-7.4
PCO/Payphones and VTS Projections, Pakistan, 2007/08-2017/18

(Million)

Users	Year									
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
PCO / Pay Phone	0.52	0.56	0.60	0.64	0.68	0.71	0.74	0.76	0.77	0.78
VTS	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75

Source: TEACH Research

7.2.6 Vehicle Tracking Services (VTS)

Licensing for VTS was introduced in 1997. About 33 companies have been awarded licenses over the period. Only about 11 of them report operating the service out of which only three are well known. It is rather difficult to obtain the exact number of users of this service as companies are not prepared to share data. Two major vehicle tracking operators claim to have about 80,000 customers each. Others are mostly small players having clientele of a few thousands. The non-targeted survey reveals that 3.6 percent of respondents are utilizing this facility.

The clients of simple vehicle tracking service are mostly new car owners; mostly those getting cars on lease. The leasers also want to guard against car theft/robbery. New trucks are also acquiring the vehicle tracking equipment as their whereabouts can be traced by their owners who can provide prompt help in the case of emergencies.

They mostly utilize web site tracking. In the last few years 10,000 cars per month were coming on roads and many of them are subscribing to this service. Similarly about 8,000 new trucks are registered per year in the trucking fleet and new trucks get facility as a standard fitting. In the last 5 years, seven hundred thousand cars/jeeps and 40,000 trucks have been added in the country. Not all of them have gone for the vehicle tracking facility. However, majority of the cars financed by bank loans have Vehicle tracking facility. More recently the economy has slowed down, interest rates have been jacked up and cars financing scheme by banks have been put on hold, Only about 5 thousands new cars are expected to be sold per month. According to VTS providers roughly fifty percent of new cars carry this facility, and number of current users is estimated to be 250,000 to 300,000. In response to survey 7.6 percent of respondents indicated a desire to subscribe to this service in future. FGD discussions reveal a demand of half a million subscribers for ten years. Table-7.4 shows the projections for next ten years in respect of vehicle tracking system.

It is rather expensive for ordinary subscriber to make use of this facility. In case initial charges of obtaining this service are reduced more subscribers are expected to be added. However with dollar becoming expensive and price of cars going up due to increase in rate of duty and taxes, the above figures based on conservative estimate gives a fair forecast.

7.3 LDI International Traffic

The private sector Long Distance International (LDI) licensees started carrying domestic and international traffic after the deregulation in the year 2004. This brought an end to PTCL monopoly in provision of Nation Wide Dialling (NWD) and overseas communication. The LDI Operators have deployed new technology of VOIP in gateways and launched prepaid calling cards services. The introduction of International Calling Cards by the LDI and later by the PTCL has resulted in fast growth of international traffic. LDI companies have opened Points of Presence (PoP) in different regions in Pakistan to collect traffic. The competition amongst

players has also brought benefits of cheaper calls for callers and large volumes for the operators. In order to meet the requirement of increased circuits, LDI infrastructure has been expanding. Large investments have been made on the inland optic fibre links and in the overseas submarine cable links.

Further expansion is foreseen to continue. Numbers of PoPs are expected to rise further and many more towns and cities are expected to have access to Internet. Presently the number of PoPs of LDI companies is 81 and the number of towns with Internet accessibility stands at more than 3000

LDI service provider licences have been awarded to companies for AJ&K area as well. Up-to-date position of the licences in Pakistan and AJK is given in Table-7.5.

Table-7.5
LDI Licences in Pakistan, 2008

LDI Licensees	Numbers
Private Sector LDI Licences issued in 2004	14
Private sector LDI licences issued for AJ&K	4
Others including PTCL, SCO & NTC	1

Source: PTA

7.3.1. FLL / WLL

Voice and data traffic is generated in use of telecommunication services. In the FLL/WLL service in a typical month a subscriber makes 97 local calls on the average, about 90 NWD calls and 8 overseas calls. The FLL subscriber makes 46 local calls to Mobile users. Another interesting finding is that (0800) services are getting popular and a subscriber on the average makes 2.14 calls in a month. In the Premium rate service e.g. (0900) only 0.2 calls are made per subscriber in a month.

As the number of telephone subscribers increases more traffic is likely to be generated and handled by LDI facilities in shape of long distance circuits, transit exchanges, and overseas circuits which have to be expanded to meet the rising demand.

7.3.2 Mobile

The study of the traffic statistics of Mobile traffic shows that on average one Mobile phone makes about two Busy Hour Call Attempts and the call completion rate is 90 percent. On daily basis 15 to 17 call attempts are recorded which is equivalent to 13 to15 successful calls per day. Out of which 3 to 4 percent are international calls which are routed through submarine cable links, satellite stations and gateway exchanges.

7.3.3 SMS

SMS service is becoming more popular and data traffic on the Mobile phone is on an increase at a much faster rate. Analysis of a typical Mobile operator shows a subscriber sends 1.2 to 1.5 SMS messages every hour at present and this calling rate is likely to increase.

7.3.4 Internet

Internet traffic is all routed through overseas Internet exchanges as peering points have not been established in Pakistan. VoIP services are also expanding rapidly. Internet bandwidth requirement is therefore increasing and is mostly routed through submarine cables. The submarine cables which have landing point in Pakistan include SEA-ME-WE-III and SEA-ME-WE-IV and TWA. A new cable I-ME-WE is likely to have a landing point in future. Cross border optic fiber links are planned to be established with China, India, Iran and Afghanistan.

Traffic data based on existing subscriber calling rate has been used to predict traffic for future years.

7.4 International Traffic Forecast

7.4.1 FLL/ WLL International Traffic

The Table-7.6 shows expected international traffic generated by .FLL / WLL Phone service.

Table-7.6
FLL/WLL Phone International Traffic Projections, Pakistan
2008/09-2017/18

(Million)

FLL/WLL	Traffic Projections									
	Year	2008-9	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
FLL Subscribers		4.4	4.9	5.3	5.7	6.05	6.4	6.7	7.0	7.25	7.45
Minutes		428	477	516	555	589	623	652	681	706	725
WLL Subscribers		2.7	3.0	3.3	3.5	3.7	3.85	4.0	4.15	4.3	4.4
Minutes		263	292	321	341	360	375	389	404	418	428

Source: TEACH Research

The estimated international traffic forecast has been arrived at using average traffic per subscriber (FLL) on PTCL network.

7.4.2 WLL International Traffic

The Table-7.6 shows expected international traffic generated by WLL service. Estimated WLL international traffic forecast has been prepared using existing average minutes per subscriber.

7.4.3 Mobile International Traffic

The Table-7.7 shows expected international traffic generated by Mobile service.

Table-7.7
Mobile Phone International Traffic Projections, Pakistan 2008/09-2017/18

(Million)

Mobile Phone	Traffic Projections									
	Year	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Subscribers		107.5	120	128	132	135	138	141	144	146.5	149
Minutes		4461	4980	5312	5478	5602	5727	5851	5976	6080	6184

Source: TEACH Research

Note: Average traffic per Mobile connection as per existing rate has been used to estimate projections for future.

7.4.4 Internet and Broadband Traffic

The Table-7.8 shows expected international traffic generated by Internet service.

Table-7.8
Internet and Broadband International Traffic Projections, Pakistan 2008/09-2017/18

Internet and Broadband	Traffic Projections									
	Year	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2017-17	2017-18
Connections (Million)		4.65	5.52	6.32	7.12	7.85	8.5	9.1	9.75	10.5	11.2
Minutes (Billion)		34	40	46	51	57	62	66	71	76	82

Source: TEACH Research

Average 20 minutes per day holding time is estimated to calculate the Internet traffic in minutes to make projections for future. The traffic increase is caused by increase in number of Internet users and improvement in working speed. It may be noted that one Internet connection is used by more than one person. as per findings of the survey. As more people get educated use of Internet will increase. It also indicates that in future Internet traffic will dominate on international links.

10.4.5 SMS Traffic

The Table-7.9 shows expected international traffic generated by SMS service.

Table-7.9
Projections of SMS Traffic, Pakistan, 2008/09-2017/18

Mobile	Traffic Projections									
	Year	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Subscriber (Million)		107.5	120	128	132	135	138	141	144	146.5	149
SMS (Billion)		2.15	2.4	2.56	2.64	2.7	2.76	2.82	2.88	2.93	2.98

Source: TEACH Research

Note: SMS traffic increase is due to more than one account, firstly because of increase in number of Mobile subscribers and secondly due to increased popularity of SMS. From December 2006 to December 2007 SMS use registered an increase of about 96 percent. FLL & WLL subscriber are also likely to use SMS facility in the coming years. It may however be noted that Table-7.9 gives aggregate of SMS traffic without segregation into inland and international categories.

7.5 Investment Forecasting / Projections

Future year-wise investment needed in the telecommunication sector is shown in Table-7.10. The projections have been arrived at on the basis of certain assumptions viz. current equipment prices have been used as basis of forecast, the old lines and the equipment will have to be replaced after serving useful life cost of which has been included, existing technologies will be substituted by new ones and consumer Premises Equipment (CPE) costs are not included in these estimates.

As may be seen during the next ten year period an investment of US$17,949 million will be required; major portion of which will go to the Cellular Mobile Service is almost 78 percent of the total investment with an amount of US$13,928 million. Expansion of FLL and WLL network will need more than US$1450 million which is 8 percent of the total investment during the period of ten years. An amount of around US$ 837 million (around 5 percent of the total investment) is expected to be spent on expansion of Internet and Broadband services.

It is expected that 25,000 to 30,000 payphones will be added in the network each year. Investment of more than US$104 million is envisaged

Long Distance and International telecommunication infrastructure will need more domestic and international links and establishment of PoPs. An amount of US$1631 million i.e. 9 percent of the total investment will be used for expansion of LDIs facilities. Table-7.10 presents a service wise break up of investment on yearly basis.

Table-7.10
Cumulative Investment in Telecommunication Sector, Pakistan, 2008/09-2017/18

(US$ million)

Type of Telecom Services	Year-wise Investment Estimates										
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	Total
FLL	166	145	120	124	115	134	116	108	101	75.0	1206
WLL	27.0	27.0	27.0	18.0	18.0	13.5	14.4	26.0	51.5	20.8	243
Mobile	1462	1461	1292	1191	986	974	1056	1280	1949	2275	13928
Internet	45.0	40.0	55.0	42.0	33.0	44.0	31.0	19.0	32.0	59.0	400
Broad band	13.1	13.2	18.8	37.5	42.0	46.5	55.5	64.5	66.0	80.0	437
Pay phones	16	15	14	13	12	11	9	7	4	2	104
LDI / Other	173	170	153	143	120	122	128	151	220	251	1631
Total	1902	1871	1680	1570	1327	1345	1410	1656	2424	2764	17949

Source- TEACH Research

Cumulative investment need of the telecommunication sector of Pakistan for next decade is estimated at US$17.950 billion.

7.6 Employment Projections

The data on employment is scarce in quality and quantity. Operators and vendors registered with Security and Exchange Commission are required to submit information on employment but compiled figures are available nowhere. To have an access to data for large enterprises is by no means easy. Moreover, many of the business concerns involved in this sector are small scale enterprises and are operating in the informal sector. However efforts have been made to gather accurate figures of staffing from insiders in the industry. Focus Group discussions were specially very fruitful in this direction. The estimates for current employment for 2008 are given in Table-7.11.

Table-7.11
Current Employment in Telecommunication Sector, Pakistan 2008

Telecommunication Services	Employment
FLL	43,370
WLL	8,282
Mobile	302,980
Internet/Broadband	6,274
LDI	11,927
Pay Phones	247,500
Call Centres, Net Café & Tele Centres	4,500

Source: TEACH Research

The methodology for estimation of employment generation was explained by TEACH and is given in detail in its Report on “Socio-Economic Impact of Mobile

Growth and Telecommunication Indicators Forecasting" submitted to PTA in 2007.

Based on the above mentioned methodology, with some changes, modifications and additions the current employment in various types of telecommunication services has been worked out and is given in Annex Tables-7.1 to 7.14 attached in Volume-II of the report. It may be noted that in the current study services like Internet/broadband, VTS, call centres and telecentres, etc. have been included which have generated considerable additional employment. As per international practice, a factor of 1.6 as a multiple to direct plus indirect employment has been used to calculate the induced employment for selected telecom services such as FLL, WLL, Mobile, Internet/Broadband and LDI. The projections for direct, indirect and induced employment for the next ten years from 2008-09 to 2017-18 have been estimated on yearly basis and are shown in Table-7.12.

The study of the employment in telecommunication sector has brought out interesting facts. The employment in the fixed telephony has reduced after privatization of PTCL and will continue to decline further with the increase in productivity levels and technological advancements. Like many other countries the telecommunication service provider like CMO & FNO companies in Pakistan are likely to outsource more and more operational functions to other companies in the coming days.

Table-7.12
Yearly Employment Projections in Telecommunication Sector, Pakistan, 2008/09-2017/18

Year	Employment			
	Direct	Indirect	Induced	Total
2008-09	340,726	385,795	753,059	1,479,580
2009-10	356,030	426,077	820,858	1,602,965
2010-11	371,918	459,948	879,317	1,711,183
2011-12	388,102	492,080	934,862	1,815,044
2012-13	404,091	522,530	986,874	1,913,495
2013-14	420,271	552,481	1,037,707	2,010,459
2014-15	435,077	581,641	1,087,310	2,104,028
2015-16	466,084	609,851	1,135,189	2,211,124
2016-17	470,771	638,012	1,182,213	2,290,996
2017-18	487,700	662,328	1,223,165	2,373,193

Source: Annex Tables-7.1 to 7.13
Note: The employment estimates include direct, indirect and induced employment

Chapter-8

Impact of Telecommunication on Economy

8.1 Economy of Pakistan

Pakistan has four provinces; Punjab, Sind, Balochistan and North West Frontier of Pakistan (NWFP), federally administrated tribal areas and federal capital. The estimated population at the end of 2007-08 is 158.10 million. Its area is 796.096 sq.km. Roughly two-third of its population lives in rural areas while the remaining one-third lives in urban areas. Punjab province is the largest with respect to population and Balochistan province is the largest with respect to area. Pakistan is blessed with distinct four different seasons i.e. winter, spring, summer and autumn. Pakistan's topography is also diverse. It has a series of high mountain chains, plains, valleys and deserts.

8.2 Growth and changes of Gross Domestic Product

The rate of growth and changes in the Gross Domestic Product in recent years is shown in Table-8.1

Table-8.1
Growth Rates by various Sectoral in GDP Shares, Pakistan, 2002/03-2007/08

Sectors	Growth Rate/Year						Share
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2003-08
Overall GDP at current market prices (Rupees Billion	4,875.6	5,640.6	6,499.8	7,623.2	8,723.2	10,478.2	100.0
Overall GDP.	4.7	7.5	9.0	5.8	6.8	5.8	
Commodity Producing Sector:	4.2	9.3	9.5	5.1	6.0	3.2	46.8
Agriculture	4.1	2.4	6.5	6.3	3.7	1.5	20.9
▪ Major crops	6.8	1.7	17.7	-3.9	8.3	-3.0	7.1
▪ Minor crops	1.9	3.9	1.5	0.4	-1.3	4.9	2.4
▪ Livestock	2.8	2.9	2.3	15.8	2.8	3.8	10.9
▪ Fishing	3.4	2.0	0.6	20.8	0.4	11.0	0.3
▪ Forestry	11.1	3.2	-32.4	-1.1	-29.5	-8.5	0.2
Industrial Sector	4.2	16.3	12.1	4.1	8.0	4.6	25.9
▪ Mining & quarrying	6.6	15.6	10.0	4.6	3.1	4.9	2.5
▪ Manufacturing	6.9	14.0	15.5	8.7	8.2	5.4	19.0
○ Large-scale	7.2	18.1	19.9	8.3	8.6	4.8	13.3
○ Small-scale	6.3	-20.0	7.5	8.7	8.1	7.5	5.7
▪ Construction	4.0	-10.7	18.6	10.2	17.9	15.2	2.7
▪ Electricity & gas distribution	-11.7	56.8	-5.7	-25.6	2.5	-14.7	1.7

Continued ----

Sectors	Growth Rate/Year						Share
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2003-08
Services sector	5.2	5.8	8.5	6.5	7.6	8.2	53.2
▪ Trans., storage & communication	4.3	3.5	3.4	4.0	6.5	4.4	10.0
▪ Wholesale & retail trade	6.0	8.3	12.0	-2.4	5.4	6.4	17.1
▪ Finance & insurance	-1.3	9.0	30.8	42.9	15.0	17.0	6.5
▪ Ownership of dwellings	3.3	3.5	3.5	3.5	3.5	3.5	2.6
▪ Public administration	7.7	3.2	0.6	10.1	9.1	10.9	6.5
▪ Social community services	6.2	5.4	6.6	9.9	8.8	9.4	10.4
Per capita GDP (Rs)	34,259	38,524	43,594	50,030	56,153	66,548	
" " (US$)	586	669	733	836	926	1,085	

Source: Pakistan Economic Survey 2007-08

GDP of Pakistan is more than Rs. 10 trillion in 2007-08. GDP had the highest growth rate of 9.0 percent in 2004-05 and the lowest growth rate of 4.7 percent in 2002-03. The average annual growth rate in GDP over last five years had been more than 6.5 percent. With regard to three main sectors, growth rate in agriculture has been in the range of 2.4 to 6.5 percent; in manufacturing, it has been in the range of 4.2 to 16.3 percent; and in services sector, it has been in the range of 5.2 to 8.5 percent. The highest growth rate in the output of major crops at 17.7 percent had been in 2004-05, in the output of minor crops at 4.9 percent in 2007-08, in the outputs of livestock and fishing at 15.8 and 20.8 percent respectively in 2005-06 and in the output of forestry at 11.1 in 2002-03. Growth rate in the produce of major crops had been negative (i.e -3.9 percent and -3.0 percent) in 2005-06 and 2007-08 respectively. For minor crops, the growth rate was -1.3 percent in 2006-07 while for forestry it had been negative in five consecutive years after the first year 2002-03 ranging from –1.1percent to -32.4 percent in 2005-06 and 2004-05 respectively. It shows that growth rate in agriculture sector is extremely volatile due to its heavy dependence on weather conditions.

In the industrial sector, growth rate had been highest in 2003-04 at 16.3 percent mainly due to remarkable growth rate in the large-scale manufacturing at 18.1 percent and an exceptionally high growth rate in electricity and gas distribution at 56.8 percent. In the same year i.e. 2003-04, the growth rate in small-scale manufacturing and construction was negative at -20.0 percent and at -10.7 percent respectively. The growth rate in the electricity and gas distribution sub-section had also been negative throughout the period except in 2003-04 and 2006-07. Since electricity and gas are the two main sources of energy, dismal growth performance of this sector drags downward productivity in other sectors of the economy. The rate of growth in industrial output in the year 2007-08 was lower

than previous years mainly due to acute load-shedding of electricity and soaring prices of oil.

Growth rate in the services sector has been quite high smooth and stable. It has varied in the narrow range of 5.2 percent in 2002-03 and 8.5 percent in 2004-05. It is notable that the highest growth rate in services sector, except in 2002-03, has been in finance and insurance in all the years. It had been exceptionally high at 30.8 percent and 42.9 percent in 2004-05 and 2005-06 respectively. It had remained in double digit at 15.0 percent and 17.0 percent in 2006-07 and 2007-08 respectively. There is a future performance of the economy as a buoyant financial sector reduces transaction costs of intermediation. Savings of households and pension funds channelled to business firms and the government at low intermediation cost if the financial system is a well performing sector.

The share of commodity producing sector and services sector is 46.8 and 53.2 percents respectively in overall GDP in 2007-08. In commodity producing sector, the share of agriculture is 20.9 percent while the share of industrial sector is 25.9 percent.

As a result of acceleration in growth rate during 2002-03 to 2007-08, the increase in per capita GDP has been remarkable. As can be seen from the last two rows of Table-1.1, per capita GDP in the country was above Rs.34 thousand, equivalent to US$509 in 2002-03. The per capita income increased to over Rs.56 thousands, equivalent to US$926 in 2006-07. The increase in the living standard has been remarkable. However, this momentum could not be continued. The year 2007-08 has been a difficult year due to internal as well as external reasons. Internally, it was a year of national elections and transition of political power. Externally, it was a year of skyrocketing oil prices, sluggish external demand for domestic exports, and the onset of international financial turmoil show-down in world economy.

The growth rate of the country did not drop by much as it was 2007-08, 5.8 percent in 2007-08 versus 6.8 percent in 2006-07. The economic situation has, however, been deteriorating sharply. The development prospects are bleak. Some of the important reasons for this deterioration are given below:

1. Food-inflation coupled with hoarding, smuggling and black-marketing of wheat flour has affected adversely almost everyone in the society.
2. Excessive load-shedding of electricity has slowed economic activity. Many business operations and household activities, that need electricity for their operation, have been curtailed.
3. The slow-down in economic activity and the uncertainty has slowed the inflow of foreign investment. The internal and external unbalances have sharply deteriorated. Pakistan has been forced to borrow from International Monetary Fund (IMF) to undertake a stabilization programme of necessity, there has to begin a period of curtailment of domestic consumption to generate exportable surplus.

8.3 Trends in inflation

The situation with respect to increasing pressures from the beginning of fiscal year 2007-08 has deteriorated as is evident from Table-8.2.

Table-8.2
Trends in Inflation, Pakistan, 2002/03 to 2007/08

Percent

Category of Price Indexes	Year					
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
General	3.10	4.57	9.28	7.92	7.77	10.27
Food	2.89	6.01	12.48	6.92	10.28	15.03
Non-food	3.24	3.62	7.10	6.63	6.02	6.82
Overall	2.10	3.00	7.20	7.50	5.90	7.50

Source: Pakistan Economic Survey, 2007-08.

General inflation and food inflation rates were the highest in 2007-08 while core inflation was also high in 2005-06 that was otherwise a year of mild inflation. It picked up momentum from soaring oil prices in international markets including wheat prices in the world market. As there was a bumper crop of wheat in 2006-07, the government had permitted wheat exports. Although only a limited amount of wheat was exported, an acute shortage of wheat had emerged in the local wheat market. Government was forced to import wheat from the international market at a relatively high price. Wheat was sold to general public at subsidized price. It burdened the national exchequer with a staggering amount of Rs. 40 billions. The new government has announced a raise in the official support price of wheat from Rs.465 to Rs.625 per 40 kilograms.

Oil, food and energy prices have risen sharply in the international market as shown in Table-8.3.

Table-8.3
Oil, Food and Energy Prices in International Market, 2007/08

Percent

Category	June-07	Dec-07	June-08
Arabian light crude oil US$/barrel	66.2	91.0	130.9
Food price index	8.5	16.5	24.0
Energy price index	10.8	29.6	47.8

Source: SBP, Monetary Policy Statement, July-Sept 2008

Oil prices have more than doubled. Food prices have increased approximately threefold and energy prices have more than quadrupled in a period of only one year from June-07 to June-08. Increase in energy prices have provided incentives for production of bio-fuels. This has severely reduced availability of food to consumers leading to an increase in food prices. Soaring food prices have propelled inflation almost in every country sparking widespread protests and in some cases, even riots in some countries like Haiti and Bangladesh.

The consumer price index (CPI) has increased in July-April 2007-08 by more than 10 percent while the corresponding figure for the last year was less than 8 percent. The single highest component of CPI is the food group, which has a weight of roughly 40 percent in 374 commodities included in the CPI. It has shown an increase of 15.0 percent in its prices. It was much higher than the corresponding food inflation of 10.2 percent in the previous year. Furthermore, inflation rate for non-perishable food items like wheat had been close to 14 percent whereas inflation rate for perishable food like tomatoes had been only 8.7 percent. Based on the current trends, the contribution of food inflation to the overall CPI is estimated at 59 percent and non-food of inflation at 40 percent.

Severity of inflation can be assessed better by looking at increase in the sensitive price index (SPI). This information is given in Table-8.4. SPI is made up of prices of 53 essential commodities collected from 17 main cities on a weekly basis. The 53 commodities included in SPI figures in the budgets of people having monthly income of less than Rs.3000/-

Table-8.4
Monthly Increase in SPI in Pakistan, 2006/07 and 2007/08

Percent

	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apri	May	Jun
2006-07	1.36	2.18	0.41	0.56	2.34	0.76	-1.32	0.09	-0.01	0.09	1.37	1.48
2007-08	1.46	1.67	2.63	1.47	0.85	1.45	2.67	-1.33	3.42	5.48	0	0

Source: Pakistan Economic Survey, 2007-08.

Increase in SPI is 3.42 percent and 5.48 percent in March and April 2008 respectively. These are the highest monthly increases in the last 30 years in the history of Pakistan. If maintained for all months of a year, such price increase would imply an annual inflation rate of 40 percent and 65 percent.

8.4 Consumption and investment

Consumption is the largest component of aggregate demand in developing countries. Pakistan is no exception as can be seen from Table-8.5.

Table-8.5
Consumption, investment and growth, Pakistan, 2005-06 to 2007-08)

Consumption	Investment (Rupees in billions)			Growth Rate (Percent) 2006-07	Growth Rate (Percent) 2007-2008
	2005-06	2006-07	2007-08		
Private consumption	5,720	6,550	8,346	14.50	27.43
Govt. consumption	824	796	926	-3.41	16.31
Private investment	1,566	1,857	2,090	18.63	12.45
Change in stocks	122	140	168	14.43	20.12
Exports	1,161	1,231	1,267	6.01	2.93
Imports	1,770	1,851	2,319	4.56	25.30

Source: Pakistan Economic Survey, 2007-08.

Private consumption expenditures increased from Rs.6,550 billion in 2006-07 to Rs.8,346 billion in 2007-08. The increase in consumption in 2007-08 was 27 percent as compared to increase of 14.5 percent in 2006-07. Private consumption was propelled mainly for two reasons; real per capita GDP in the country increased at an average rate of about 5 percent during the last five years and workers remittances increased by more than five fold during the same period. Both factors had led to heavy spending by people.

Private investment increased to a record level of 22.9 percent of GDP in 2006-07. It then declined to 21.6 percent of GDP in 2007-08. It has continued to increase in absolute terms from Rs.1,857 billion in 2006-07 to Rs.2,090 billion in 2007-08. Investment is a key determinant of both current and future growth. Declining investment rate is an indicator of poor growth prospects in coming years.

8.5 Fiscal developments

Fiscal discipline in Pakistan has been a problem. There was an improvement in 2002-03 and 2003-04 as budget deficit decreased from 3.7 percent of GDP to 2.4 percent of GDP. Reduction of current expenditure by government from 18.6 percent of GDP in 2002-03 to 16.7 percent of GDP in 2003-04 despite moderate increase in developmental expenditure from 2.3 percent of GDP in 2002-03 to 3.2 percent of GDP in 2003-04 explains the reduction in fiscal deficit. Budget deficit increased in 2004-05 and 2005-06 to the level of 3.3 and 4.2 percents of GDP respectively given in Table-8.6. The increase in 2004-05 is attributable to a significant increase in current expenditure by government (from 16.7 percent to 18.4 percent of GDP) and to a notable decrease in tax revenue from 11.0 to 10.1 percent of GDP, whereas the increase in budget deficit of 2006-07 is mainly due to increase in developmental expenditure from 3.9 percent to 4.3 percent of GDP. Fiscal performance in 2006-07 was also not very encouraging. It may be noted that the reported figures of budget deficit for the years 2004-05 to 2006-07 do not correspond well with the reported figures of expenditures and revenue. This is a statistical discrepancy in Pakistan Economic Survey 2007-08.

Table-8.6
Fiscal Indicators as Percent of GDP, Pakistan, 2002/03- 2007/08

(Percent)

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08 (projected)
Overall fiscal deficit	3.7	2.4	3.3†	4.2†	4.3†	4.0
Expenditures	18.6	16.7	18.4	18.7	20.2	18.8
Current	16.3	13.5	14.5	14.4	15.8	13.8
Development	2.3	3.2	3.9	4.3	4.4	5.0
Revenue	14.9	14.3	13.8	14.2	14.9	14.8
Tax	11.5	11.0	10.1	10.4	11.0	11.0
	3.4	3.3	3.7	3.8	3.9	3.8

† These figures are adjusted for statistical discrepancy
Source: Pakistan Economic Survey 2007-08

The projections of budget deficit for 2007-08 were not realized as actual budget as percentage of GDP was much higher. According to SBP data, shown in Table-8.7, budget deficit touched the figure of 8.3 percent of GDP which is more than double the percent of budget deficit realized during last five years. The budget deficit in 2007-08 is the highest ever in Pakistan's history. There has been a clear violation of Fiscal Responsibility and Debt Limitation Act 2005. Under this Act, the revenue deficit (total revenue minus current expenditures) was to become zero by the end of fiscal year 2007-08. However, as a consequence of fiscal indiscipline, the revenue deficit at Rs.287 billion was 2.7 percent of GDP. The Act also requires that the public debt as percentage of GDP must decline by 2.5 percentage points. Instead of declining, public debt actually increased sharply. The outstanding stock of government debt to SBP i.e. Market Related Treasury Bills (MRTBs) has reached Rs.1053 billion, which is almost 10 percent of GDP. Efforts of SBP to off load these MTBDs to the market have already exerted high pressure on interest rates. The 3 month cut-off rate has increased to 11.7 percent.

Table-8.7
Budget Deficit and Borrowing from SBP, Pakistan, 2007/08

	2007-08 (projected)	2007-08 (actual)
Fiscal deficit (Percent of GDP)	4.0	8.3
Borrowing from SBP (Rs. billion)	-62.3	689

Source: SBP, Monetary Policy Statement, July-Sept 2008

Pakistan is not self-sufficient in energy. It purchased crude oil at international prices. However, government does not pass on the high oil prices to the consumers; often it gives large subsidy on oil. The subsidy on oil and wheat has increased more than thrice from the projected figure of Rs.114 to Rs.407 billion. More than 80 percent of the deficit was financed by borrowing from the SBP which had attained the level of Rs.689 billion. This is in sharp contrast to the target of paying back of Rs.62.3 billion. Instead there was a monetization of budget deficit. As reported in the Monetary Policy Statement July-Dec 2008 of SBP, heavy borrowing from SBP have breached the annual and quarterly limits on government borrowings as per decision of the State Bank's Board of Governors.

8.6 Monetary policy

To stem the inflation only pressures, the monetary policy has been quite restrictive since 2005. In April 2005, SBP raised the discount rate by 150 basis points from 7.5 percent to 9.0 percent. SBP had again raised the discount rate to 9.5 percent in July 2006 as past increases in the discount rate did not reduce inflationary flames effectively. Despite mildly contractionary stance of monetary policy, inflation remained high due to the exceptionally high oil and food prices in international market and political instability and power shortage in the country. During 2007-08, the inflation target of 6.5 percent was surpassed by 1.3 percentage points as headline inflation was 7.77 percent in 2006-07.

State Bank of Pakistan had kept the tight monetary policy stance from the start of 2007-08. SBP had raised the discount rate and Cash Reserve Ratio (CRR) thrice during the year. The discount rate was increased to 10 percent and CRR to 7 percent in August 2007, to 10.5 percent and 8 percent respectively in the beginning of second half of the fiscal year and to 12.0 percent and 9 percent respectively in May 2008. CRR was applicable only to deposits of less then one year maturity. Deposits of longer maturity were exempted from CRR in order to encourage greater resource mobilization through longer maturity. The objective was to reduce maturity mismatch of bank loans that are mostly for longer time periods and of bank deposits that are mostly for shorter time periods. It was expected that it would also reduce the incidence of interest rate risk. Statutory Liquidity Requirement (SLR) has reached the level of 19 percent.

To control imports, SBP has also introduced margin requirement of 35 percent for opening of letter of credit for general imports excluding oil and food items. To benefit bank depositors, SBP has in May 2008 had fixed floor of 5 percent on the rate of return on profit and loss sharing and saving accounts. However, the restrictive measures of SBP did not produce expected benefit as the government borrowings from SBP had increased sharply. Table-8.8 shows that Net Domestic Assets (NDA) increased from Rs.470.5 billion in FY07 to Rs.1025.3 billion in FY08, an increase of 30 percent, while Net Foreign Assets (NFA) decreased by Rs.307.0 billion in FY08 against an increase of Rs.222.7 billion in FY07. The increase in NDA is mostly due to increase in government borrowing. In spite of significant change in assets of SBP, money supply (M^1) increased from Rs.2,896.5 billion in FY07 to Rs.3,365.7 billion in FY08.

Table-8.8
Monetary Aggregates (Flows) in FY07 and FY08, Pakistan, 2007/08

(Rupees billion)

	FY07	FY08
NDA	383.7	940.4
Domestic credit	478.5	1025.3
Govt. sector	92.8	583.6
Non-government sector	385.7	441.7
NFA	274.6	-316.4
SBP	222.7	-307.0
Scheduled banks	51.8	-9.4
†Money supply (M^1)	2,896.5	3,365.7

† M1 denotes the stock value for the year and is taken from Pakistan Economic Survey 2007-08.

Source: SBP, Monetary Policy Statement, July-Sept 2008

8.7 Developments in Balance of Payments

The swelling import bill mainly due to rising oil prices has changed the overall BOP from a positive figure of US$3.7 billion in FY07 to a negative figure of US$5.8 in FY08 as shown in Table-8.9.

Table-8.9
Balance of Payments (BOP) Statistics, Pakistan, 2007/08

(US$ Billion)

	FY07	FY08	FY07-H2	FY08-H2
Current account balance	-6.9	-14.0	-2.2	-8.0
Trade Balance	-9.7	-15.3	-4.4	-9.0
Exports	17.3	20.1	8.9	10.9
Imports	27.0	35.4	13.3	19.9
Non-food non-oil	16.9	21.4	8.6	11.7
Services net	-4.2	-6.3	-1.7	-3.0
Income net	-3.6	-3.9	-1.8	-1.9
Current transfers	10.6	11.5	5.6	6.0
Capital account balance	0.3	0.1	0.1	0.0
Financial account balance	10.1	8.7	0.2	4.8
Foreign direct investment	5.1	5.2	3.3	3.1
Portfolio investment	3.3	0.0	2.0	-0.1
Errors and omissions	0.2	-0.5	-0.3	-0.9
Overall balance	3.7	-5.8	3.8	-4.1
Foreign exchange reserves	15.6	11.4		11.4
Exchange rate (Pak Rs. / US$)	60.4	68.3		68.3

Source: SBP, Monetary Policy Statement, July-Sept 2008

This reversal in overall BOP situation is mainly due to exceptional increase in import bill from US$27 billion in FY07 to US$35.4 billion in FY08, heavy increase in net imports of services from US$4.2 billion in FY07 to US$6.3 billion in FY08 and a notable decrease in portfolio investment from US$3.3 billion in FY07 to US$0.0 billion in FY08. As a result, trade deficit increased from US$9.7 billion in FY07 to US$15.7 billion in FY08 and financial account balance decreased from US$10.1 billion in FY07 to US$8.7 billion in FY08. Trade deficit is around 9.2 percent of GDP that is not sustainable.

Deterioration in BOP situation was more pronounced in the second half of the FY08 (FY08-H2). Trade deficit at the end of FY08-H2 was US$9.0 billion which is more than double the FY07-H2 level US$4.4 billion. Oil and wheat imports as well as food non-oil imports also grew rapidly from US$16.8 billion in FY07 to US$21.4 billion in FY08 and from US$8.6 billion in FY07-H2 to US$11.7 billion in FY08-H2. Such a large increase in non-food non-imports is reflective of rapidly rising aggregate demand in the economy owing to high growth in GDP in previous years and consistent inflow of heavy amount of remittances in the country. More than half of the current transfers comprise of workers' remittances that were US$6.5 billion out of US$11.5 of current transfers in FY08. It is also a matter of great concern that portfolio investment in the country has reversed; against a net inflow of portfolio investment of US$2.0 billion in FY07-H2, there was a net outflow or net liquidation of previous portfolio investment worth US$0.1 billion in FY08-H2 from the country. While there has been a decrease in portfolio investment from foreign investors in FY08 and in FY-H2 in particular, foreign direct investment in the country has been quite stable that is a good sign.

A steep rise in current account deficit and net outflow from portfolio investment during FY08, particularly in its second half had led to high pressure on its exchange rate of Pak rupee. To escape any sudden devaluation of Pak rupee, SBP intervened in foreign exchange market. It had lost a huge amount of US$ 4.1 billion of foreign exchange reserves in FY08. Despite this it could not waved off growing pressure on Pak rupee. Consequently, Pak rupee had depreciated from Rs.60.4 at the end of FY07 to Rs.68.3 at the end of FY08. It was a depreciation of roughly 13 percent. In last two months, Pak rupee has further depreciated roughly by another 13 percent from its value of Rs.68.3 at the end of FY08.

8.8 Taxes and telecommunication sector

Government of Pakistan has always been keen to promote social sector services to both improve social indicators in their own right but also to maximize their contribution to Gross Domestic Product. The government has increased taxes to finances provision social service. When the T&T Department was converted into a Corporation in 1991, Central Excise Duty (CED) at the rate of 35 percent was imposed on the telephone and Mobile calls. Previously no tax was leviable on these services as these were provided by a government department.

General Sales Tax and Federal Excise Duty (FED was earlier called CED) and Withholding Tax etc. were levied on different categories of telecommunication services from time to time. It may be noted that Withholding Tax was first introduced as a tax according to different slabs. It was later converted into actual rates, percent of the amounts of the telephone bills as well as the prepaid Calling Cards both on fixed and Mobile phones. Activation tax on Mobile phones was imposed in addition to other taxes.

The Table-8.10 shows the rates of different taxes in different years. Rates of CED was reduced from 35 percent to 25 percent and then to 15 percent in the Finance Bill 1999. The reduced tax rate had resulted in the increase in the number of calls which had resulted in larger tax collection. The CED fetched an amount of Rs.21.59 billion showing an increase of Rs.5.84 billion for the government in 2003-04 over the amount of Rs.15.75 billion of 2002-03.

Table-8.10
Tax Rates Trend, Pakistan, 1998/99-2007/08

Year	Type		GST / FED	CED	Activation Tax	SRO
	Mobile	FLL				
	Percent				(In Rupees)	Sec 236 & 50 (7F) (a) &(b)
1998-99	10	4	25	10	-	
1999-00	10	4	15	10	-	
2000-01	10	4	15	0	-	
2001-02	10	4	15	0	2000	
2002-03	10	4	15	0	2000	First Schedule Part IV Divn V(a)
2003-04	10	4	15	0	2000	
2004-05	10	4	15	0	1000	

Year	Type		GST / FED	CED	Activation Tax	SRO
	Mobile	FLL				
	Percent				(In Rupees)	Sec 236 & 50 (7F) (a) &(b)
2005-06	10	4	15	0	500	Section 236, SRO 390(1)/2001
						Continued -------
2006-07	10	10	15	0	500	First Schedule Table II,
2007-08	10	10	15	0	500	
2008-09	10	10	21	0	500	Section 236

Source: Finance bills of relevant years.

Note: i) Apart from WHT, activation charges are levied @ Rs.500/- per Mobile connection & Custom Duty @ Rs.250 per Hand Set during 2008-09

ii) FED on Telephone calls and Mobile calls reduced to 15 percent from 25 percent in the year 1999-00.

iii) FED extended to all other services from 2006-07 except Internet related services.

As a result of liberalization of the telecommunication services in 2003 the Mobile phone service has grown rapidly. The number of subscribers have increased exponentially. The amount collected on account of all the Taxes has increased to Rs.100.55 billion in the year 2006-07 from only Rs.30 billion in the year 2002-03. The Tax collections have further risen to the amount of Rs.111.6 billion in the year 2007-08.

The rate of General Sales Tax (GST) has been raised from 15 percent to 16 percent and Federal Excise Duty from 15 percent to 21 percent on telecommunication services during the year 2008-09 through Finance Bill, 2008. It has to be seen whether it will result in comparatively higher tax collections or not.

Prior to the year 2002-03, PTCL was not required to pay income tax to the government. The exemption under telecommunication Law, 1996 has now expired. Currently PTCL has to pay the income tax on its profits in addition to the taxes collected by it on behalf of the government.

Custom Duty on the personal computers was reduced to zero percent in the year 1998-99. However, the sales tax at a rate of 15 percent has been levied from the year 2006-07. The effect of this heavy charge on the computers and telecommunication services needs to be carefully watched as it may slow- down and is likely to effect their growth. Internet related services are exempted from the Federal Excise Duty.

8.9 Projections of tax collection

Table-8.11 shows expected collection of taxes from the telecommunication sector by the Government of Pakistan during the next ten years. The estimates are based on the current rates of taxes and duties on different segments of the telecommunication sector remaining in operation. At present withholding tax at the rate of 10 percent is levied on the Fixed Lines Telephone bills exceeding Rs.1000

per month. About 20% of the bills exceed Rs.1000 per month. Projections of taxes have been made that this proportion would not change. This tax is levied at 10% on all the Mobile bills. GST is levied at the rate of 21% on all telecommunication services except the Internet. Activation tax of Rs.500 is charged from Operators on each of the new Mobile connection. Import duty of Rs.500 has been imposed on the import of the Mobile sets. An additional amount of 10% is estimated for the Mobile sets, so the projections include extra 10% for collection on account of replacement of sets. The revenue of Government of Pakistan from operation of PTA and other organizations have not been taken into account in projection. Similarly the custom duty on import of telecommunication equipments etc. has also not been accounted for. It is expected that the actual tax receipts will be more than the estimates shown in the Table-8.11.

Table-8.11
Projections of Government Revenue and Taxes from Telecommunication Sector 2008-09 to 2017-18

(Rupees Million)

Years	WHT on FLL	WHT on Mobile	GST on FLL	GST on Mobile	Activation Tax	Custom Duty	Total
2008-09	1,706	21,744	17,914	45,663	9,500	5,225	100,046
2009-10	1,955	24,999	20,530	52,498	6,250	3,438	107,714
2010-11	2,192	27,463	23,020	57,673	4,000	2,200	114,356
2011-12	2,416	29,169	25,365	61,255	2,000	1,100	118,888
2012-13	2,637	30,724	27,688	64,521	1,500	825	125,258
2013-14	2,855	32,347	29,981	67,928	1,500	825	132,581
2014-15	3,070	34,039	32,236	71,482	1,500	825	140,081
2015-16	3,295	35,803	34,599	75,187	1,500	825	147,914
2016-17	3,516	37,515	36,916	78,781	1,250	688	155,148
2017-18	3,715	39,296	39,011	82,522	1,250	688	162,767

Source: Economic Survey of Pakistan, 2008 and PTA Annual Reports.

8.10 Estimation of investment in telecommunication sector

The investment in the telecommunication sector has shown a significant increase over the past few years. Table-8.12 shows investment in telecommunication for the last 4 year.

Table-8.12
Investment in Telecommunication Sector, Pakistan, 2003-04 to 2007-08

(US$ Million)

Year	Mobile	Total
2004-05	1158.1	1472.8
2005-06	1420.9	1731.1
2006-07	2718.7	4108.8
2007-08	2337.7	3113.2

Source: Economic Survey of Pakistan, 2008 and PTA Annual Reports.

8.11 Foreign Direct Investment in telecommunication

As a result of liberalization of economy and creation of favorable environment for investment in Pakistan, Foreign Direct Investment (FDI) in a number of economic sectors has shown an increasing trend. Telecommunication sector has been one of the major sector that has received FDI. The share of FDI in telecommunication sector share in the Foreign Direct Investment has increased from 1.26 percent in 2001-02 to 54 percent in 2005-06. It has averaged more than 35 percent from 2003-04 onward. Foreign Direct Investment in the telecommunication sector had reached a level of US$1905 millions in 2005-06, US$1824 millions in 2006-07 and US$1439 millions in 2007-08. Table-8.13 shows the FDI for the last seven years.

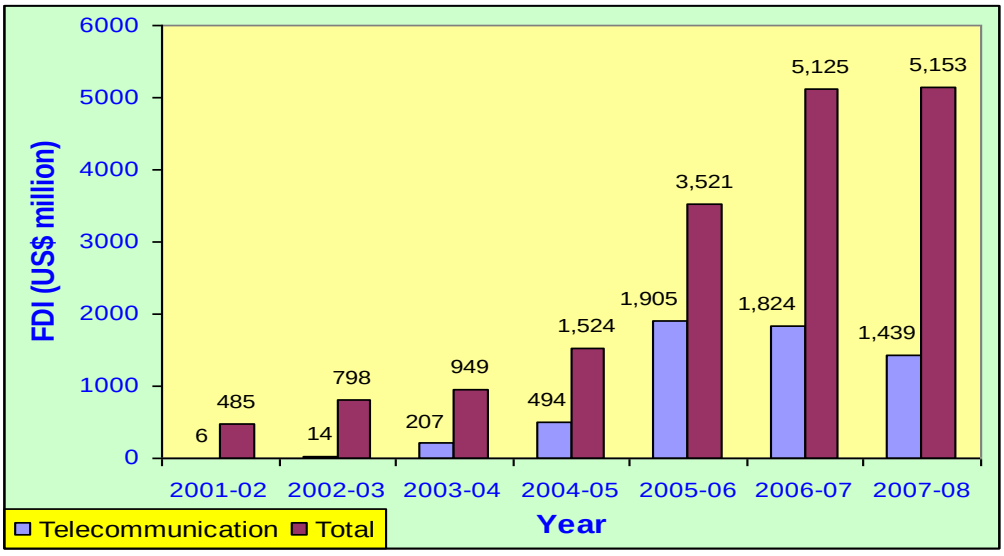
Table-8.13
Foreign Direct Investment, Pakistan, 2001/02-2007/08

(US$ Million)

Years	Total FDI	FDI in Telecommunication	Percent
2001-02	485	6	1.24
2002-03	798	14	1.69
2003-04	949	207	21.81
2004-05	1,524	494	32.44
2005-06	3,521	1,905	54.11
2006-07	5,140	1,824	35.49
2007-08	5,152	1,439	27.93

Source: Economic Survey of Pakistan, 2008 and PTA Annual Reports.

Figure-8.1
Foreign Direct Investment, Pakistan, 2002-2008



8.12 Telecommunication imports

Import of the Mobile sets in the country has increased many folds with the result that huge amount of foreign exchange has been spent on the imports. It may

be noted that Imports worth of US $ 446 millions were made during 2007-08. Table-8.14 and Figure-8.2 show year-wise imports of telecommunication equipment for the last five years including Mobile handsets.

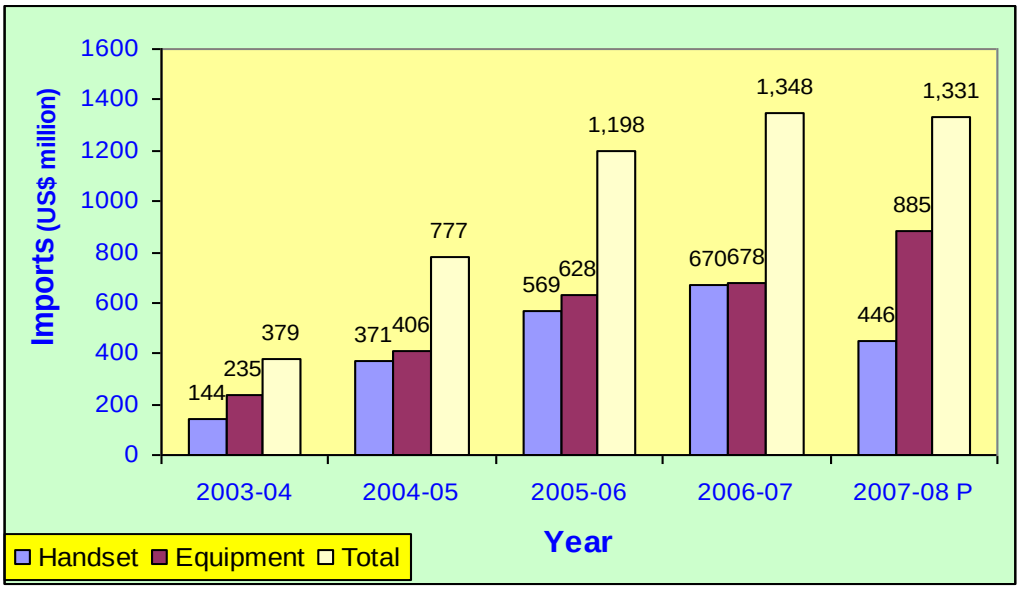
Table-8.14
Telecommunication Imports, Pakistan, 2003/04-2007/08

(US$ Million)

Years	Import of Hand Sets	Import of Equipment	Total Imports
2003-04	144	235	379
2004-05	371	406	777
2005-06	569	628	1,198
2006-07	670	678	1,348
2007-08 P	446	885	1,331

Source: Economic Survey of Pakistan, 2006, 2007, 2008 and PTA Annual Reports 2005 to 2008

Figure-8.2
Telecommunication Imports, Pakistan, 2003/04-2007/8



8.13 Revenue of telecommunication sector

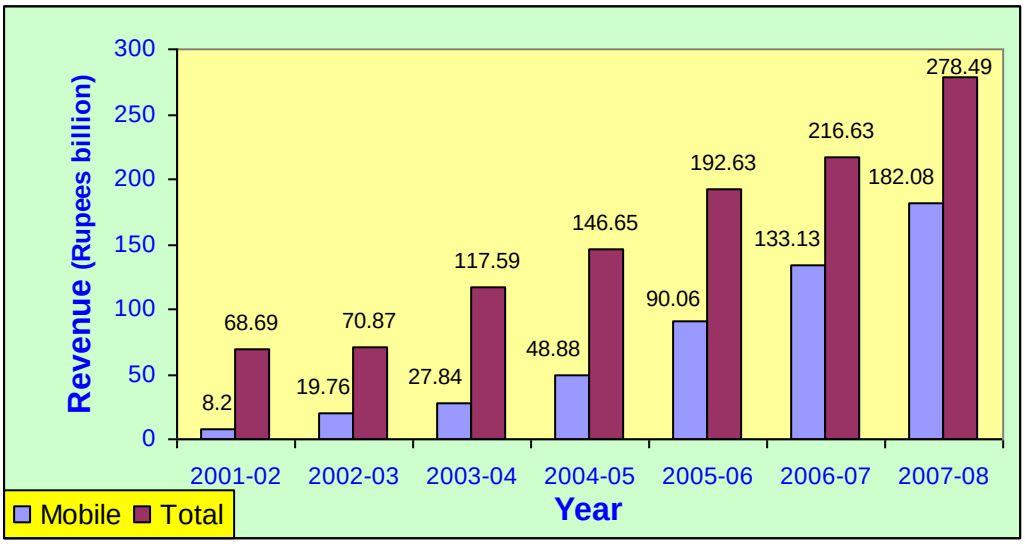
Rate of Growth of the revenue in telecommunication sector was not very high till the year 2002-03. With the announcement of the new telecommunication policy in the year 2003 and introduction of three new players in the Mobile industry, the Mobile phone numbers grew rapidly and revenue therefore rose to Rs.272.82 billion in the year 2007-08 against revenue figure of only Rs.70.87 billion during the year 2002-03 showing an increase of 57 percent per year during the last five years. Table-8.15 and Figure-8.3 show year wise growth of telecommunication sector revenue including that of Mobile.

Table-8.15
Revenue of Telecommunication Sector, Pakistan, 2001-02 to 2007-08
(Rupees Billion)

Years	Mobile	Total
2001-02	8.20	68.69
2002-03	19.76	70.87
2003-04	27.84	117.59
2004-05	48.88	146.65
2005-06	90.06	192.63
2006-07	133.13	216.63
2007-08	182.08	278.49

Source: PTA Annual Reports.

Figure-8.3
Revenue of Telecommunication Sector, Pakistan, 2001/02-2007/08



Note: In order to avoid duplication of revenue the sale of cards and payphone charges are not included in 2007-08 figures.

8.14 Revenue Projections of telecommunication sector, 2008-09 to 2017-18

Table-8.16 shows the estimated revenue from different segments of the telecommunication sector for the years 2008-09 to 2017-18. It is expected that revenue from this sector will grow with the increase in the number of connections. It is apprehended that the high rate of inflation may compel the operators to enhance their tariff to keep earning for their survival. Calculations for the Broadband service have been made according to the present tariff of the segment with the assumptions that the tariff rate will decrease in future as technology matures.

Table-8.16
Telecommunication Services Revenue Projections, Pakistan, 2008-09 to 2017-18

(Rupees Million)

	FLL	WLL	Mobile	Broadband	Internet	Total
2008-09	52,865	32,440	217,442	3,312	7,899	313,957
2009-10	60,638	37,125	249,988	4,320	9,615	361,686
2010-11	67,556	42,063	274,632	5,280	11,236	400,768
2011-12	74,834	45,951	291,688	7,920	12,750	433,143
2012-13	81,812	50,034	307,243	9,960	14,143	463,192
2013-14	89,141	53,624	323,468	12,960	15,400	494,593
2014-15	96,119	57,385	340,388	15,732	16,505	526,129
2015-16	103,436	61,323	358,032	19,722	17,662	560,175
2016-17	110,344	65,445	375,146	22,464	19,102	592,501
2017-18	116,789	68,976	392,964	26,784	20,378	625,891
2018-19	2.21	2.13	1.81	8.09	2.58	1.99

It includes revenue of all telecommunication services such as fixed telephony, Mobile phone, Long Distance International and Internet etc. Mobile revenue figures are shown separately because it forms a major component of the revenue.

The average revenue per user (ARPU) of Mobiles is decreasing its rapid expansion. It is Rs.164 per month during 2007-08 and was Rs.179 per month during 2006-07 whereas the same was Rs.686 in the year 2002-03. Nevertheless companies are making profit because of large number of users.

The Long Distance International (LDI) has also showed its growth. With the introduction of competition and consequent reduction in the call rates for the international traffic and other customers which attracted the people to make overseas calls freely. The LDI revenue was Rs.22 billions in the year 2007-08. Internet service has contributed Rs.12.6 billion and broadband Rs.4.8 billion.

The telecommunication sector has contributed substantially toward the national exchequer and economy. During the last year its contribution was at a record high level of Rs.100.1 billions in the shape of taxes and duties. With expansion of the telecommunication sector its share in the GDP also increased from 1.6 percent in the year 2001-02 to 2 percent in the year 2007-08.

Table-8.17
Telecommunication Contribution to National Exchequer, Pakistan, 2001-02 to 2007-08

(Rupees Billion)

Years	GST	Activation Tax	PTA Deposited	Others	Total
2001-02	8.90	0.12	0.04	0.99	10.05
2002-03	11.50	1.91	0.47	15.75	29.63
2003-04	12.10	4.02	0.69	21.59	38.40
2004-05	20.50	7.53	17.72	21.38	67.13
2005-06	26.80	11.40	17.38	21.55	77.13
2006-07	36.28	17.58	9.72	36.95	100.53
2007-08	44.61	19.20	10.86	36.96	111.63

Source: PTA Annual Reports.

The overall revenue (revenue plus taxes etc.) generated by the telecommunication sector, comes to Rs.390.09 billions and in relation to GDP it stands at 6.9 percent. It is expected that this ratio will further increase in the future provided undue encumbrance of heavy taxation on telecommunication sector is not resorted to.

8.15 Consumer surplus

Another contribution to the economy is in the shape of increase in consumer surplus generated by Mobile phone services. As a result of competition, the price of service has come down. Call rates have become lower and consequently the subscriber is paying less for the service causing larger consumer surplus. Table-8.18 shows estimate of consumer surplus for the last five years.

Table-8.18
Consumer Surplus, Pakistan, 2002-03 to 2007-08

(Rupees Billion)

Year	Sub-scribers *	ARPU (Rs)**	Yearly Additions in Subscribers					Total
			2.4	2.60	7.80	21.70	27.60	
2002-03	2.40	686		-	-	-	-	-
2003-04	5.00	464	6,394	-	-	-	-	6,394
2004-05	12.80	318	10,598	4,555	-	-	-	15,154
2005-06	34.50	218	13,478	7,675	9,360	-	-	30,514
2006-07	62.10	179	14,602	8,892	13,010	10,156	-	46,660
2007-08	88.50	164	15,034	9,360	14,414	14,062	4,968	57,838
Grand Total			60,106	30,482	36,785	24,217	4,968	156,558

*PTA Annual Reports.
**Calculations on the basis of revenue figures in PTA.

Consumer surplus has been observed in other services also. Competition in LD,I for instance, has been responsible for drastic reduction in overseas call rates. For certain destination calls, tariff has come down from Rs.50 to Rs.1.0 per minute. Call rate for all countries have come down. However, calculation of consumer surplus in this area is complex and requires input from all operators for proper estimation.

8.16 Value Chain for telecommunication industry, Pakistan, 2008

The Figure-8.4 shows the Value Chain of telecommunication sector in Pakistan. The value chain is based on the financial performance of the year 2007-08.

From the figures, it is evident that subscribers provided US$.4,491.3 (Million) to the telecommunication industry in total as its revenue during the year 2007-08. Fixed Network Operators earned US$1182.8(Million), Cell Mobile Operators US$2953.9 (Million) and Long Distance International (LDI) US$ 354.6 (Million).

The sector also received US$1308.2 (Million) in the shape of taxes like GST, Duty and WHT from the end users and passed it on to the Government. The sector also made contribution of US$492.3 (Million) to the Government from its own revenues. Thus Government managed to get an amount of US$ 1800.5(Million).

The Telecom sector attracted US$1,438.6 (Million) as Foreign Direct Investment (FDI) for the expansion of the networks in the country.

The sector spent an amount of US$696.8 (Million) on handsets and CPEs which was received from the end users.

Terminal Suppliers in turn passed on US$289.8 (Million) to the component providers and US$211.0 (Million) to the dealers, retaining US$196.0 (Million). All this activity mostly took place outside Pakistan.

An amount of US$1392.9 (Million) was spent on Fixed and Cellular Mobile Telecommunication Network Equipment.

Equipment Suppliers paid US$ 573.4 (Million) to the Platform Component Suppliers and retained US$ 819.5 (Million). This part of value chain is located outside Pakistan.

Telecommunication Operators disbursed US$541.9 (Million) to the other Capital Items Suppliers and US$ 685.0 (Million) to the Suppliers of Support Services.

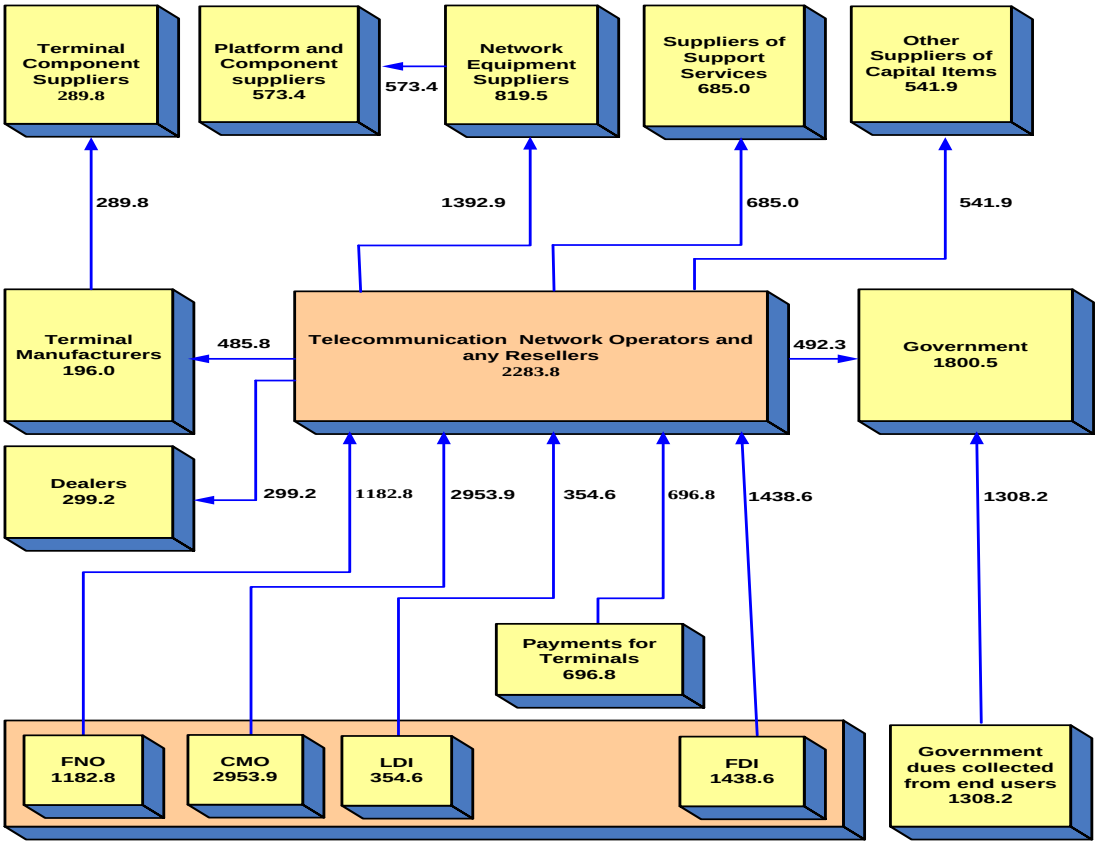
The telecommunication sector invested US$3,113.2 (Million) out of which Fixed Line Operators shared US$385.4 (Million), Cellular Mobile Operators US$ 2,337.7 (Million) and Long Distance International (LDI) US$390.1 (Million).

The telecommunication sector remitted abroad amount of US$1,410.9 (Million) on imports and repatriation of profits, which is approximately 18.9% of the total amount.

Figure-8.4

Value Chain for Telecommunication Industry, Pakistan, 2008

(US$ in Million)



8.17 Transport and Communication

Transport and Communication is part of the service sector in Pakistan. According to Pakistan Economic survey "A well performing Transport and communication structure is vital for country's development. Investment in country's infrastructure directly affects economic growth as producers find the best markets for their goods, reducing transportation time and cost and generating employment opportunities. Improvements in the quality and quantity of infrastructure have disproportionately positive impact on the poor and thus play a vital role in reducing income inequality". Transport and communication include infrastructure like roads, transport, ports, shipping, airports, airlines, postal services and telecommunication. In this era of globalization telecom particularly provides fast access to international markets and has reduced transaction time of deals. Transport and Communications has been contributing to 10.5 percent of GDP growth. This is about one-fifth of the total service sector which has share of 53.3%

in the GDP. Telecommunication's share is two percent in the GDP. It may be kept in view that if impact of telecom on increased productivity and other intangible benefits is taken into account its contribution to GDP is about five percent. Investment in Transport and communication continues in the private sector as well as public sector. While Airports, ports, roads and highways & railways are still being developed in the public sector, transport & telecommunication have received major investment in the private sector. In postal services, shipping lines and airlines, main role is played by public sector with private sector also running courier services, shipping lines and small size airline operation.

8.18 Taxes and Telecommunication

Till 1990, the telecom sector was the part of Ministry of Communications and Telegraph and Telephone Department was an attached department of the Ministry. In 1990 the government granted autonomy to the department and converted it into a corporation (PTC). The autonomy was not accompanied by reduction in tax burden.

Table-8.19
GDP (at Constant Factor Cost) and Share of Telecommunication

	01/02	02/03	03/04	04/05	05/06	06/07	07/8
GDP growth rate (percent)		4.7	7.5	9.0	6.6	7. 0	5.8
Service Sector growth rate of (percent)		5.2	5.8	8.5	9.6	8.0	8.2
growth rate of transport and communication sector (percent)		4.3	3.5	3.4	6.9	5.8	4.4
Share in GDP Services sector (percent)	52.4	52.4	51.6	51.3	52.8	53.3	53.2
Share in GDP Transport & Communication (percent)	11.4	11.4	10.9	10.4	10.4	10.3	10.0
Share in GDP Telecommunication			1.7	1.9	2.0	2.0	2.0

The concept of consumer surplus has been used by economists widely to quantify the benefits of telecommunication facilities. There are mainly two methods in vogue to measure the consumer surplus]. These methods are based on

(i) Measuring the consumption effects due to changes in price of telecommunication facility one being willing to pay a certain price and other the actual expenses on use of same.
(ii) Measuring the difference in cost of performing a task using telecommunication and the cost of do the same through other least cost alternate means.

Method based on change in price of telecommunication facility provides a more practical means to measure the consumer surplus a compared to the alternative method for which available data is rather short and there is innumerable variation of tasks for which telecom facility provides an alternative.

8.19 Tariff of Telecommunication Sector in Pakistan

This section includes the discussion of the prevailing telecommunication tariff regime in Pakistan. It consists of tariff principles, tariff components, tariff issues, and problems. It deals with methodology of fixing tariff and interconnect charges. Future trends of tariff and recommendations are also included in this section.

First of all it should be examined whether telecommunication operators are providing the service at a reasonable price and to the satisfaction of the customers. Is the tariff of the services determined by the operators based on their own strategies and plans or on some scientific basis?. Does the regulator provide direction and issues direction whenever necessary?. Is there intervention of substantial nature by the regulator?. The answer to all these questions is needed for appraising the issue whether the tariff structure is serving the national interest.

8.19.1 Background of Tariff Structure

In the past, the telecommunication operations were controlled by the government who also used to fix the tariff for the telecommunication services. Main consideration was to raise revenue for the government. The tariff was reviewed as and when felt necessary so that government could receive the desired amount of revenue. Due to the monopoly regime, the charges for the telecommunication services were generally on a higher side. Also due to control of fund allocation by the government, the growth of telecommunication services was slow. With the liberalization of telecommunication sector and availability of foreign direct investment, the growth of telecommunication services registered a much faster rate. Competition increased among the players. Moreover, the introduction of new services in the industry like mobile telephony had introduced new concept of charging for the services, which has changed the whole tariff structure.

8.19.2 Trend of Fixed Lines Tariff in Pakistan

8.19.2.1 FLL Tariff

Tariff of fixed line connections traditionally was a two part regime consisting of a fixed charge and a per call charge. The charges included installation charges, line rent, local call charges, nation wide call charges, and international call charges. Value added services like CLI, voice mail, conference call etc. were charged separately at different rates.

Over time, the tariff has observed a downward trend. The Installation fee, a one time charge, was Rs.3690 in the year 2000 but has been reduced gradually to Rs.675 currently.

The line rent was charged at Rs.245 per month till the year 2000. It has been reduced to Rs.174 in year 2003.

The local call charges have, however, gone up. Initially there was no metering of time for the calls. The rate was set at Rs.2.01 per 5 minutes in year 2000. The charges were changed to Rs.2.00 for every 3 minutes for the call with effect from June 2008. This implies a reduction of 67 percent over this period.

The nation wide call rates were time-metered and charged according to the distance. Initially there were ten slabs of distances, which were later reduced to 3, based on distances of 80 KM, 160 KM and beyond 160 KM. The call rates were Rs.3.04, Rs.6.09 and Rs.11.37 per minute respectively. The distance metering has now been abolished and a fixed rate of Rs.2.00 per minute on a country wide basis has been prescribed. The rationale behind the reduction in the rate is lower cost of channels made possible by optic fibre technology.

Table-8.20
Trend of Tariff, Pakistan, 200

(Rupees)

Year	Installation Charges	Line Rent	Local Calls	NWD Calls			International Calls	
			5 Minute	80Km	160Km	More than 160Km	Group 1	Group 2
2000	3690	245	2.01	3.04	6.09	11.37	53.13	33.42
2001	3690	245	2.01	3.04	6.09	11.37	43.76	27.00
2002	1850	261	2.01	3.48	6.09	6.09	33.91	21.74
2003	1095	174	2.01	3.48	5.65	5.65	26.09	21.74
2004	675	174	2.01	3.48	4.25	4.25	20.00	20.00
2005	675	174	2.01	3.00	3.50	3.50	18.00	18.00
2006	675	174	2.01	2.00	2.00	2.00	2 to 25	8 to 15
2007	675	174	2.01	2.00	2.00	2.00	2 to 25	8 to 15
2008	675	174	2.01	2.00	2.00	2.00	2 to 25	8 to 15

In addition Government used to charge GST at a rate of 15% Which has now been increased to 21% with effect from July 2008.

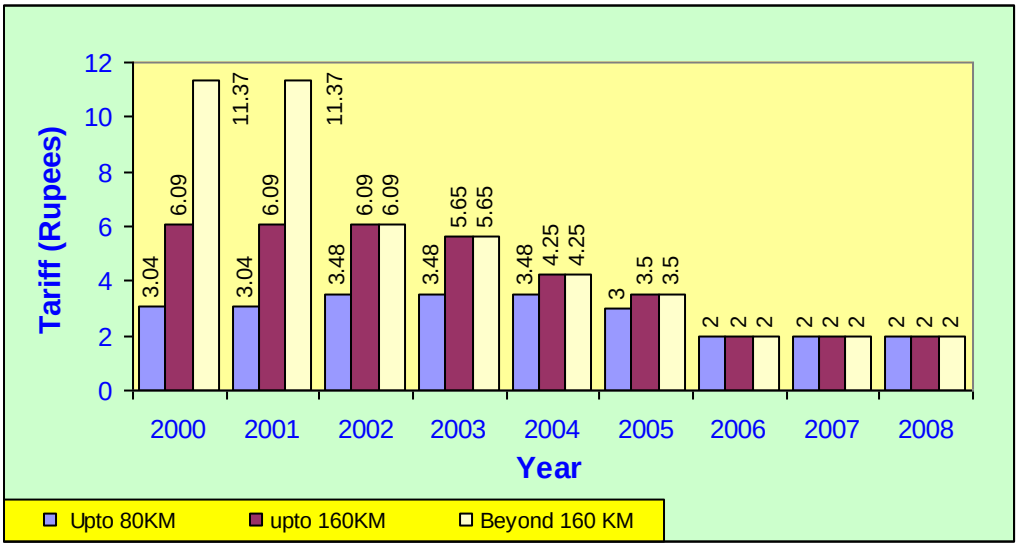
8.19.2.2 NWD Calls Charges

The NWD tariff is given in Table-8.21.

Table-8.21
Trend of NWD Tariff, Pakistan, 2008

Year	Tariff (Rupees)		
	Distance		
	80KM	160KM	Beyond 160 Km
2000	3.04	6.09	11.37
2001	3.04	6.09	11.37
2002	3.48	6.09	6.09
2003	3.48	5.65	5.65
2004	3.48	4.25	4.25
2005	3.00	3.50	3.50
2006	2.00	2.00	2.00
2007	2.00	2.00	2.00
2008	2.00	2.00	2.00

Figure-8.5
Trend of NWD Tariff, Pakistan, 2008



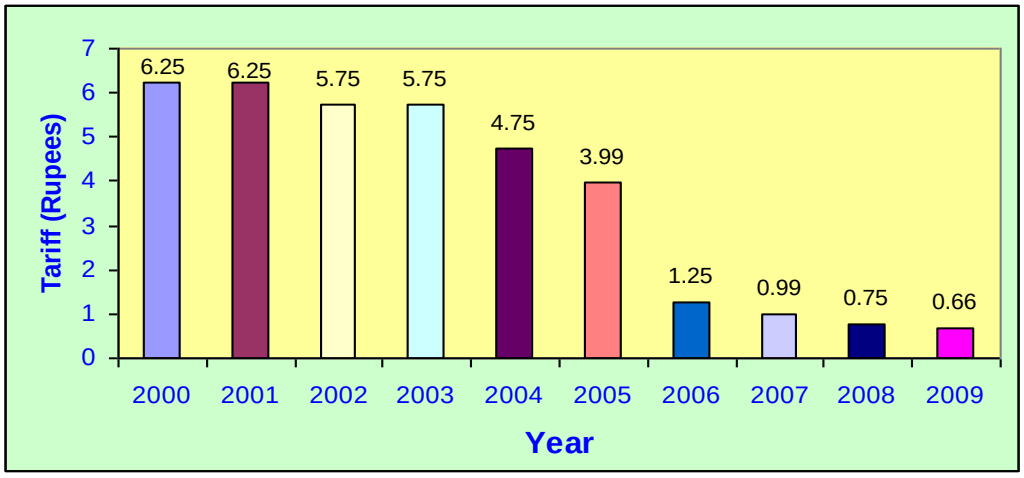
8.19.2.3 Mobile Phone Tariff

Mobile phone service was introduced in Pakistan during 1990's. Both parties i.e calling and called parties were charged. Prepaid connection system was introduced soon after. Tariff consisted of outgoing airtime charges, call charges for local, NWD & IDD access charges and roaming charges. Charges were very high. In year 2000, calling party pay regime (CPP) was introduced and tariff of mobile telephony started falling rapidly. As a result of competitive environment created by two additional operators, the rates plunged to Rs.1.25 per minute in 2006 from Rs.6.25 in 2000. Mobile operators floated new packages to lure the customers and the call rates decreased to Rs.0.75 per minute in year 2008 with a further reduction to Rs.0.66 per minute in 2009. SMS is charged at a rate of Rs.0.50 per message within Pakistan and Rs.1.50 for international message. Value added services like MMS, music, GPRS etc. are charged additionally. Table-8.22 shows airtime charges over the last ten years.

Table-8.22
Trend of Mobile Tariff, Pakistan, 2008

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Rates (Rs)	6.25	6.25	5.75	5.75	4.75	3.99	1.25	0.99	0.75	0.66

Figure-8.6
Trend of Mobile Tariff, Pakistan, 2008



8.19.2.4 Long Distance International

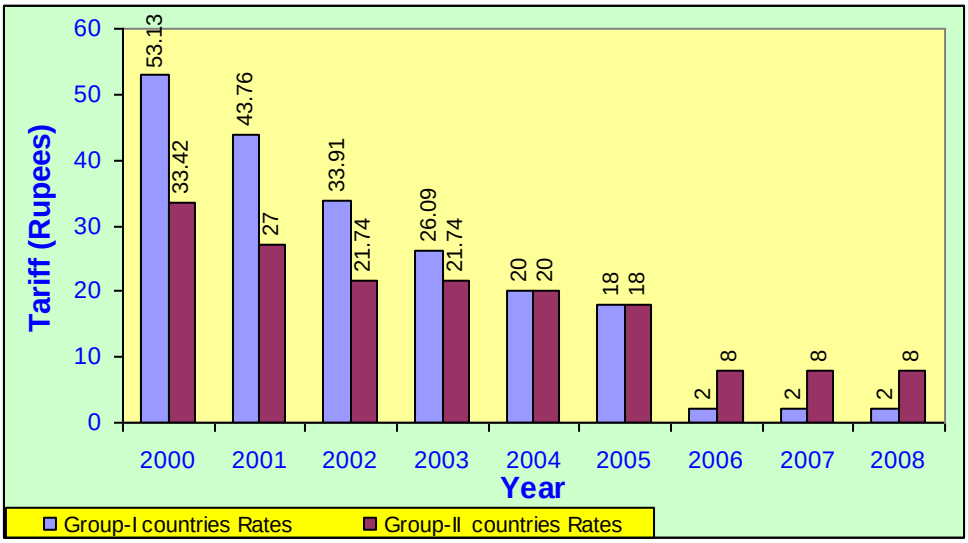
As far as international calls are concerned, there was hardly any benchmark for the fixation of tariff. The call charges were based on settlement rates agreed bilaterally between the countries. Wherever transit was involved the charges were higher. However, optic fiber, submarine cables and, more recently, VoIP technology have made operation more economical and have caused a drastic reduction in rental of overseas circuits. Consequently charges of international calls have come down.

Till year 2000, the long distance and international services were provided only by the PTCL the incumbent monopoly operator. With the issue of 14 new Long Distance International licenses, competition has been introduced. As a result, international call rates have come down substantially, from Rs.74 per minute in 1998-99 to Rs.2 per minute in 2006 for a majority of destinations. There are still some destinations with higher call rates. It may be kept in view that the tariff of international calls are subject to a termination charge of the foreign end operators. Table-8.23 shows the trend in the overseas tariff charged per one minute.

Table-8.23
Trend of International Tariff, Pakistan, 2008

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Group-I countries Rates (Rs)	53.13	43.76	33.91	26.09	20.00	18.00	2.00 to 25.00	2.00 to 25.00	2.00 to 25.00
Group-II countries Rates (Rs)	33.42	27.00	21.74	21.74	20.00	18.00	8.00 to 15.00	8.00 to 15.00	8.00 to 15.00

Figure-8.7
Trend of International Tariff, Pakistan, 2008



There are anomalies in the overseas calls rates. For instance, calls to Saudi Arabia costs Rs.8.99 per minute while calls to far away countries like Canada and USA are charged at Rs.2.00 per minute only although both destinations have comparable traffic volume.

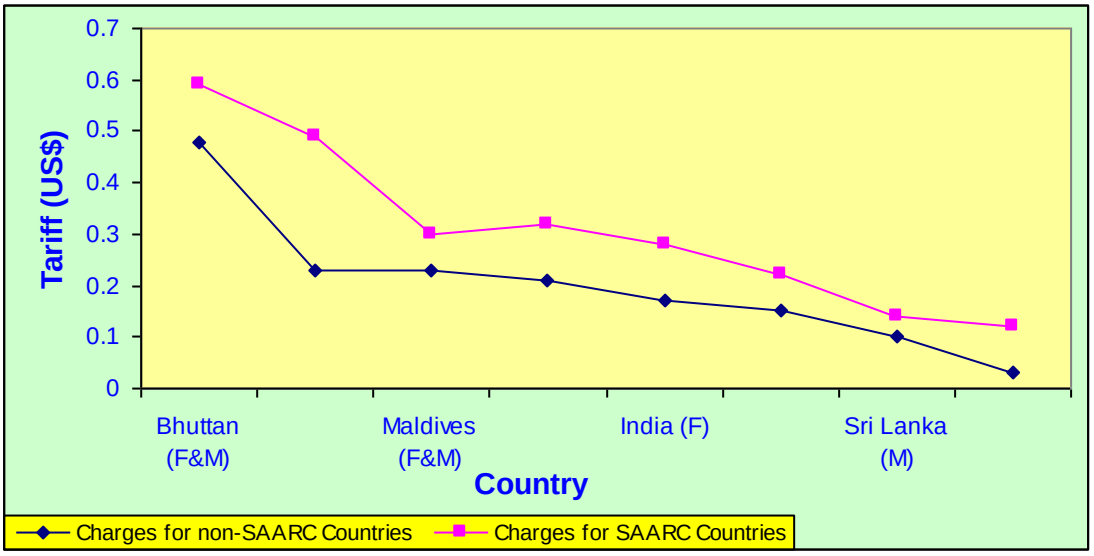
International call rates prevailing in Pakistan and SAARC countries have also been compared. Table-8.24 shows the call charges in US$ per minute for SAARC non-SAARC destinations. As may be seen, call charges offered by Pakistan are the lowest.

Table-8.24
International Call Rates

	Charges for Non-SAARC Countries	Charges for SAARC Countries	(US$ per minute)
	(USA,UK, etc)	SAARC	Remarks
Pakistan (F&M)	0.03	0.12	
Sri Lanka (M)	0.10	0.14	India 0.14, others higher rates
Sri Lanka (F)	0.21	0.32	
India (F)	0.17	0.28	Sri Lanka 0.17
India (M)	0.15	0.22	
Bhutan (F&M)	0.48	0.59	India 0.31
Afghanistan (M)	0.23	0.49	Pakistan 0.18
Maldives (F&M)	0.23	0.30	

Notes: i. F indicates Fixed, ii. M indicates Mobile

Figure-8.8
Comparison of International Tariff, Pakistan, 2008



8.19.2.5 Internet and broadband services

When Internet service was introduced in Pakistan, the internet use charges were on high side at Rs.50 per hour. Now with reduction of lease line rental, the narrow band internet rates have dropped to a level of Rs.10 per hour. Broadband Internet rates are still on a high side. For example, monthly rates of DSL broadband service introduced by PTCL for 512 kbps connection are Rs.1199 per month. They provide free modem and installation. The tariff for WIMAX service are given in the Table-8.25. The basic reason for this situation is introduction of new technology of WIMAX which is relatively costly. However, the rates are expected to come down due to increased competition.

Table-8.25
Broadband Tariff, Pakistan, 2008

(Rupees per month)

Service Provider	128Kbps Rupees	256Kbps Rupees	512Kbps Rupees	768Kbps Rupee	1 Mbps Rupees	2 Mbps Rupees
PTCL	-	-	1199	-	2499	4999
Wateen Telecom	-	499	599	699	799	-
WorldCall	750	1100	1400	1900	2600	5100

As the number and variety of telecom services is increasing, the user charge comprises of more and more components. The basket of tariff, for instance, in case of mobile consists of airtime (on-net and off-net), long distance, line rent charge for post-paid connections, NWD / IDD access charges, LLD charges, bill medium fee etc. There are charges for value added services like SMS, MMS services. Also there are other numerous facilities, options and features. Earlier on, there used to be roaming charges which is now applicable

only if mobile phone is used for calling an overseas country. The operators are now offering various packages and value added facilities as frills. In the coming days they expect to earn more from such options than the basic service. Any tariff review would also require to look into these extra sources of income and rates.

8.19.3 Tariff issues and Problems

It may be kept in view that the tariffs are determined for the purpose of earning revenues and earn a fair return on the investments. Main hurdle in ascertaining the suitable tariff system is that costs are not disclosed by the operators. The regulator feels handicapped for making any worthwhile intervention. The best option seems to be that a Generic Cost Model be prepared by the regulator. In it the cost of each element of the service be illustrated distinctly and at be tied with the volume of each kind of traffic generated by the system concerned. The operation of such a model tariff may be kept totally transparent so that all operators can study it and provide their inputs. The model should be designed on the basis of Long Run Incremental Cost (LIRC) principle as per the accepted international practice.

Determination of tariff should tackle floor as well ceiling level of tariff. Tariff level is a basic issue which needs to be settled for examining fair compensation to the service providers. This will provide them means to obtain sustainable growth. The second issue relates to the ceiling level of tariff which concerns the paying capacity of the majority of the end users.

The study of tariff will not be complete without the examination of issue of interconnect. Fixing interconnect charges at equitable level falls within the arbitration role of the regulator. Over charge by any party in interconnect results ultimately in passing on the burden to the user. Current practice of allowing operators to settle amongst themselves is reasonable and should be encouraged. Interconnect offers of SMP operators should be available on the net so that chances of discrimination are reduced. Incidentally, criteria for declaring an operator as SMP needs to be reviewed after every two years so that changed market conditions are taken into account.

8.19.4 Recommendations

The regulatory authority should prescribe that the operators should make available their functional results and data of operations so that fair fixation of tariff can be ensured and all stakeholders are aware of the rationale behind tariff fixation.

Higher settlement rates prevailing with some countries need to be brought at par with those with lower call rates.

A study should be designed and standardized by the regulator using an econometric test model of telecommunication system for tariff. Its input side will consist of investment cost, financial charges, operational cost and tariff charges

and out put will show income. It will provide a test to determine floor and ceiling level of tariff for each service based on the traffic volume. Its working should be done in a transparent manner and all operators should be enabled to access it. It can provide a test bench for the tariff proposals. It will also help in simplifying tariff packages offered by the operators to a level that these become comprehensible for the common user.

8.20 Drivers of Telecommunication Market

Before proceeding to the discussion of future forecast for different telecommunication services in Pakistan, it is necessary to be familiar with the background of Pakistan telecommunication market which has made a transition from a monopoly regime to a liberalized market. The transition process started in the year 2002 when monopoly of the incumbent operator i.e. PTCL ended in basic telephony service. Deregulation of value added services started too much earlier. Government had inducted two private sector mobile operators in 1991. They were given exclusivity by including conditions in the license that had given them exclusive use of services provided by it. The third mobile operator joined the market in 1993 through an appeal against the earlier licensing decision. Even in the mobile telephony at that stage the market was not fully deregulated as competition was restricted. In fact, free market conditions did not prevail because connectivity at local loop level, countrywide level and international level was in the sole domain of the PTCL. The mobile operators and value added service providers were dependant entirely on PTCL for connectivity at all stages. In real terms the free market conditions commenced in the year 2004 when licenses were awarded by PTA for local loop, LDI and two new mobile operators in the private sector started delivery of service. The process of transition to fully competitive market has been smooth and was completed with the privatization of PTCL. While making forecast for future, one has to look for main drivers of telecommunication market. In a monopoly market the main drivers are the status of economy, rate of growth of income distribution, GDP and the customer characteristics like demand and segmentation. The size of market would depend on overall economy of the country in terms of GDP per capita income, price index, investment size, volume of consumption and value of foreign trade. In a fully, competitive market, list of main drivers consists of the following:

i. Economy of the country;
ii. Customers and their needs and their perceived value;
iii. Regulatory regime, its main elements being transparency, level playing field, interconnection rules, offerings and stability;
iv. Product substitution and innovation in basket of services;
v. Technology and adaptability of its latest versions;
vi. Competitors, Telecommunication Service Providers and other Stakeholders like Vendors and Contractors;
vii. Pricing and yield management;
viii. Quality of Service and ability to implement the bench marks;

ix Company developments in conformity with local company laws including commercial as well as management aspects;
x. Political stability;

While these has been a smooth transition in the sector, it is important to stress that for Pakistan telecommunication market to grow, the stake holders and companies must position themselves for long term presence in the country. The Government should make sure condition for inflows of FDI continue to exist. At the moment, the economies at national and international level are facing recessionary conditions. With the taking over of new government in USA bailout measures introduced in other developed countries, the recovery of world economy should start by end of 2009 or early 2010. It will also have positive effect on the economy of Pakistan as well. The local industry as well as policy makers need to prepare themselves to avail new opportunity whenever it happens.

Impediments in the inflow of Foreign Direct Investment need to be removed. The level of FDI in the current year is lower than the last few year. The government needs to create new avenues of investment. It should take early action for implementation of modern services like 3G and VOIP services. Regarding the pricing, a new formula should be devised to fix the price based on rate of return. There should be a better understanding between the companies and the policy makers and the company goals need to be redefined in conformity with the policies enunciated earlier. The competition in the local loop has not yielded expected results. It needs a review of the policy to provide for more incentives to local loop players. In this connection, taxation on telecommunication services needs to be reduced to previous year level. Quality of Service is another issue which needs regular monitoring and improvement. These measures will accelerate the growth rate.

The recommendations made in the appropriate chapters address the drivers of the telecommunication market.

8.21 Manufacturing industry and transfer of technology

Transfer of Technology in the telecommunication sector in Pakistan has been a weak area. The projects for the development of telecommunication infrastructure almost entirely rely on the imported technology. The only exception is provided by medium scale industry, which manufactures copper and optical fibre cables. In the value chain of telecommunication operation, large amount of payments go to foreign suppliers. Local industries have the capability to fabricate towers and manufacture of engine generators required for Base Transmission Stations of the WLL and mobile network. However competition from abroad has not allowed the local manufacturers to benefit to any great extent even during last three years of boom in the rollout.

There is, however, a large pool of trained human resource which has made important contribution in the installation, testing and upkeep of the telecommunication networks. After independence Pakistan made an impressive

start in the manufacture of the then telegraph line material and telephone exchanges in the public sector. Telegraph & Telephone owned Telegraph workshop had fabricated open wire line material which was in great demand. Telephone Industries of Pakistan (TIP) and Carrier Telephone Industries (CTI) set up in 1953 and 1969 respectively manufactured manual and automatic exchanges, telephone sets and tele-printers, carrier and multiplex equipment and radio transmission links in partnership with Siemens Germany. In 1990, Alcatel (France) had set up a factory for manufacturing digital telephone exchanges. Another small factory, NRTC, has been manufacturing wireless equipment in the HF and VHF range. PABX manufacture was started in Private sector in 1990s and continues on a small scale.

At one time the TIP and CTI had a yearly turn over of Rs 2.5 billion and Rs 1.1 billion respectively. Alcatel factory produced equipment worth Rs 1.05 billion annually. The total turnover of the industry in the country was Rs 11.8 billion in year 2002-2003. However, in wake of deregulation of the sector the situation has changed dramatically. Siemens has pulled out of TIP and Government has sold all of its 52% stake in CTI to Siemens. With the privatization of PTCL both TIP & CTI factories have lost their share of sales in the local market. Their line of production did not include cellular mobile equipment. Secondly, competition from Chinese firms has led to an adverse impact on them and they have been virtually ousted from market. Alcatel is, however, able to survive as it managed to take some share of the local cellular phone market. Being in the public sector TIP and CTI were not accustomed to free market environment. These organizations were not spending enough money on R&D and BMR. The management of these concerns failed to foresee the coming environment of globalization and the development of new technology. Even at the time of pull out by Siemens there was failure to induct a new international partner The government has ended up owning entire TIP while there is liberalization and privatization all around. With the expansion in number of subscribers of phone and internet terminals market in Pakistan consisting of telephone sets, ADSL/DSL, mobile sets and computers has grown tremendously and gadgets are in great demand but none of needed items are manufactured here. Import bill has become large and is on the rise. During the last year, telecommunication equipment worth US$ 446 Million (Rs 35 billion) and cellular mobile handsets worth Rs US$ 885 Million (Rs 71 billion) were imported. On an average, 9 to 10 million, Personal Computers (PCs) costing about Rs 25 billion are imported annually. Enforcement of technical standards in respect of terminal equipment is lacking. There is no proper system of quality control of mobile handsets. Pakistan is considered a dumping ground for such equipment. Second hand handsets and computers are freely available. Situation has in a way benefited the market to achieve rapid expansion but it has removed all incentives for setting up of industry in a country which is suffering from severe balance of payment problem. Exchequer cannot continue to set aside Rs 1.0 billion per year for import of mobile handsets alone. In case a sustainable development has to be achieved in telecommunication sector, the local manufacture has to be encouraged. One option is that Government may utilize some of the R&D funds to

modernize facilities for manufacture of telecommunication equipment like mobile handset telephone sets, triple play terminal boxes and computers etc.

Basic infrastructure exists in shape of TIP and other factories. An aggressive hunt for a joint venture partner is needed to make some progress in this area. Of the multinationals, Nokia has 56 percent share of handset market in Pakistan. Board of Investment and other concerned Authorities should negotiate with Nokia for setting up a plant to manufacture the medium quality popular brands in Pakistan. Recently they have announced a decision to invest about US$ 240 million in India for handset manufacture. There is a need to convince these multinationals to allocate a similar amount for Pakistan Project.

Chapter-9

Policy and Regulatory Measures

Generally speaking the state of regulation in the telecommunication sector in Pakistan has been considered as pro-development. It has been both stable and transparent. It has been open to suggestions by the players in the market. Consequently, the sector has reaped dividends in attracting Foreign Direct Investment (FDI) and evoking interest by important regional telecommunication players. Operators like Omantel, Q-Tel, and SingTel have gained a significant presence through acquisition of substantial shares in the existing operating companies. Telenor a European origin has expressing satisfaction with the regulatory system in Pakistan. South Korea Telecommunication is engaged in serious negotiation with a local company to buy a considerable stake. China Mobile has entered the market with a big bang. However, the rating as determined by some of the monitoring organizations like Business Monitor International (BMI), gives 80 marks to regulation in Pakistan. Pakistan rank is same as that of India. The rating is higher than that of South Korea (70 marks) but less than Malaysia, Japan and Taiwan (all 90 marks each). In an analysis, Pakistan obtains lower marks in telecommunication market index and country structure. It appears that the independence of the regulator in Pakistan has been compromised by some provisions in law, which do not rule out interference by the government. According to the telecommunication law, the number of licences to be given for a particular service is to be decided by the government. As such, the government can through a directive, stop the regulator from issuing additional licences or ask PTA to issue licences when the regulator is of the view that it was not necessary. There is need to evolve a transparent method of arriving at the number of licences to be issued.

Attention is also required to be given to the downward revision of license fees which, at present seems to be quite high. The level of licensing should only be nominal and it should preferably be expressed as percent of revenue.

Provisions for Access Promotion Contribution should also be reviewed keeping in view the interests of LL/LDI operators. The distribution of call termination charges by international carriers should be on a percentage basis with respect to their expenses in terminating the call.

The second reason for the low ranking of Pakistan is the government’s hold on the frequencies. This has resulted in the allocation of major chunks of frequencies to non-commercial use which results on scarcity of allocation for certain essential services. The regulation of the frequency spectrum should receive due attention in any policy review. It is necessary to unify the regulation of licensing and frequency spectrum allocation with proper legal provisions. Furthermore, there should be provisions for recovery and "reforming" of previously assigned spectrum that is unused or underutilized in order to accommodate new services. Provisions should also be made to withdraw/cancel spectrum, even in

use, for optimal/efficient use to adopt latest/modern technologies. It is also necessary to broaden the membership of the Frequency Allocation Board and representation should be given to the telecommunication service providers especially the small investors.

Pricing of the radio spectrum in Pakistan needs a serious review. The current situation gives an impression of arbitrariness. The mechanism of fixing radio spectrum prices should be such that it seems equitable, reasonable and understandable. It should lead to fixation of prices for various allocations that ensure achievement of the purpose for which the spectrum is used.

The question of representation in the regulatory decisions is related to the composition of the Authority itself. The present set up of 3 members in the PTA has been working efficiently. There is some scope for improvement in enhancing the number of members through the participation of the private sector and other segments of the society. If the Authority is enlarged to include some non executive and non-official members in the decision making, it may improve and enhance the level of transparency.

Box-9.1
Functions of Regulatory Bodies

Four regulatory bodies have been functioning in Pakistan for over 8 years. Pakistan Telecommunication Authority (PTA), National Electronic Power Regulatory Authority (NEPRA), Oil & Gas Regulatory Authority (OGRA) and Pakistan Electronic Media Regulatory Authority have been performing their role effectively. The respective sectors have made rapid strides after the creation of these institutions. The three bodies were established through different Acts by the Parliament. In case of PTA, the Authority consists of three members who perform functions as Chairman, Member Technical and Member Finance. All members have been appointed on a full time basis and receive monthly remuneration. Likewise OGRA consists of a Chairman and two full time sitting members.

NEPRA is responsible to regulate Power sector and consists of a Chairman and four members each representing a province. The Chairman and all members perform functions as full time executives.

PEMRA has been constituted on different lines. The Authority consists of ten members and a Chairman. Only the Chairman and one member work on full time basis, other eight are non-sitting members and contribute only in the meetings of the Authority. Out of them four come from government and are appointed in ex-officio capacity while the other four are from the public. PEMRA has the benefit of representation by the private citizens in its meetings and decisions meeting. Such an arrangement is designed to ensure greater degree of transparency, strength and independence of the Authority. The variation in structure, functions and powers of the Authorities have been incorporated on the recommendation of the respective Ministries keeping in view the specialized nature and compulsions of their sectors. Analysts and commentators can always point out advantages and disadvantages of each setup. However, it will not be fair to pass verdict on superiority of one over the others without a proper monitoring and evaluation study. In fact the achievements of all the four Authorities have been noteworthy. This is especially so as telecommunication sector has developed very fast. There can always be perception about shortcomings and drawbacks in their legal framework. International best practices suggest continuous review and evaluation to overcome such problems. In addition, the government has to look into every sector in totality keeping in view all the interlinked institutions including regulatory bodies and their performance. It is presumptuous to make valid suggestions in isolation.

The independence of the regulatory bodies, including the PTA in Pakistan was compromised by the constitution of a Cabinet Committee on the Regulatory Bodies (CCRB). It may be clarified that CCRB has been created to streamline the working of regulatory bodies. There does not seem any intent to influence the decision making by the regulators. However, there are some concerns in this regards and some observers see the existence of cabinet committee as lining the independence of the regulatory bodies.

There is a general complaint about adequate Quality of Service (QoS) by the subscribers. Quality of Service has regularly been checked by PTA. It had imposed a hefty penalty on one of the big operators. Despite this action of PTA, users continue to voice dissatisfaction about the Quality of Service. It is understandable that the regulator cannot become an effective monitor unless sufficient resources are devoted to ensure high quality. It is proposed that, like UK, assistance should be made available to the regulator in this area. Government may give consideration to setting up of Councils of Complaints at important stations in the country with adequate authority and funding to perform their function. Regulations may be laid down for these Councils to be manned by notable citizens duly empowered to call operators and recommend relief to the aggrieved customers and penalise the defaulting operators and/or suppliers. Unless the citizens are empowered and, provisions are incorporated for compensation to the customer in lieu of long interruptions in service or inconvenience caused to him/her or adversely affecting his/her business or personal affairs, issues of QoS are not likely to be addressed adequately.

In a recent case in Australia, a defect was found in the manufacturing of handsets. The regulator ordered the withdrawal of all models of handsets from the customers and the market. The sets were replaced free of cost. Such measures need to be introduced in Pakistan. Laws need to be enacted to achieve such outcomes.

In the coming years, the regulation has to cope with the convergence and overlapping of different services. The voice services, Internet, broadband, data and video programmes are increasingly becoming available from one connection. At the moment there are two distinct regulators each for telecommunication and electronic media respectively. The boundaries of jurisdiction between the regulators have become blurred resulting in conflicting regulations and duplication of regulatory fees. Similarly in the coming days with technological developments, voice services will become part of Internet. Already such handsets are in advanced stage of development which will interface with the Internet terminals i.e. computers. With the advent of these IT telephony handsets those having an Internet connection would not require separate telephones. The Regulatory framework needs to be modified to allow for effective use of the new technology. One solution could be to merge the telecommunication computer and media regulation under one body. The other alternative would be to redefine the roles of

the two regulators e.g., one dealing with the infrastructure and frequencies and the other be made responsible for contents e.g. electronic media transmitters will be subjected to regulations of the Telecommunication regulator while the programmes being broadcast would conform to content regulations. Similarly in case of Internet and cable TV the technological aspect would come under control of the telecommunication regulator along with VoIP telephony while Internet videos and films shall conform to statutes of content or media regulator. The policy review by the government needs to resolve such issues. In consultation with the industry, stake holders in voice communication services, Internet services and electronic media broadcasting the government would need to ensure that respective service providers do not have to deal with multiple regulators. It may be added that sufficient flexibility should exist in the future regulatory framework to face the challenges arising from expected changes in the shape of new technologies, modern services with new features.

It is pertinent to highlight two important areas that require the attention of the regulator. One relates to non performing licensees. Many parties were awarded licences and allocated radio frequency band for the purpose of operation of Wireless Local Loop (WLL) services. Majority of licenses could not even make a start because of dominance of mobile operators who are offering full mobility at very low tariff. Secondly, there is extensive competition within the WLL and the policy did not offer any incentive or protection to a small operator. It was also difficult to obtain interconnects by small operators from the Significant Market Players (SMP) and the fixed line operators at favourable terms. Most of these non-performing licensees have had their fee forfeited and some of them are holding on to the radio spectrum and trying to sell it at a premium. For example, a mobile operator had purchased DVCom along with its radio spectrum which it will use for its fixed line service.

The regulator should address the plight of the small size licensees with lot of understanding and sympathy. For those who are willing to return the radio spectrum allocation, the regulator should reimburse him/her the fees already paid without imposing any penalty. The Regulator will not lose financially as it can offer the spectrum to other players at a higher price. The awardees can launch new services and/or expand their existing operations. Such a step will prevent hardship to the small companies on the one hand and also will discourage undue acquisitions which can create distortions in the market.

Another issue relates to helping the licensees whose operation may have been adversely affected for reasons beyond their control. Take the example of pay phone industry. While that was not more than 100 licensees operating pay phone services, about five hundred thousand pay phones were in operation. As the call rates fell operating pay phone became a non profitable activity. Pay phone companies had employed a large number of people who have already become jobless. The regulator should institute a fact finding body to look into such cases and try to find a solution so that people who have invested in this industry are

helped and, if possible, still remain able to generate some income. It may be reiterated here that pay phone holders are mostly small shop keepers and they are the ones who had financed, the pay phone. The survey reveals that there are many people who will like to use pay phone when they don't own the phone. The regulator should intervene to protect the interest of the fledgling players.

It needs to be noted that quite a number of new technologies are waiting to be used on a large scale. VoIP for example, offers new opportunities for operators as well as subscribers in terms of services and the prices. Triple play services have also immense potential. Policy regarding VoIP should be framed so that regulations for licensing by PTA are finalized allowing interested parties to operate this service leading to large expansion in telephone numbers in the country.

Lastly it is important to highlight the need for taking effective steps to remove impediments in the way of expansion of the networks. Interconnect issues have emerged and has led to lot of dispute among inter-operators. There is need to review PTA regulations in this regards. PTA should implement its regulations in this important area. The Consultants are not recommending any third party monitoring body to resolve the outstanding issues. There is a need to convene an inter-operator meeting under the chair of PTA where all such issues are raised and resolved. This standing committee can also oversee infrastructure sharing issues including co-location.

Box-9.2
Base Transmission Station & Co-location

Rollout of mobile phone network involves construction of new Base Transmission Stations (BTS) and their interconnection through Microwave links to the Master Switching Centre. At present there are 21518 BTS working in the country for mobile phone networks. Seven thousand seven hundred and ninety three BTS were installed during financial year 2007/08. WLL and WiMax service also requires establishment of BTS with exactly similar facilities except that the frequency bands are different. Total number of sites for WLL and Wimax stand at 2897 and 850 respectively. BTS installations consist of steel towers or pedestals which support omni-directional antenna system for Mobile or WLL or Wimax and parabolic antenna of the microwave system. These heavily loaded structure bases need to withstand severe climatic conditions including winds of high velocity blowing at a speed of 160 Kms/h. These rugged lattice poles are placed on strong concrete foundation but in some cases may involve too much weight on the foundation. Radio transmission equipment and no-break electric power equipment is housed inside a building and/or within a metallic shelter which has to be air-conditioned. Commercial power supply is used to power the system with back-up storage batteries and engine generators. Needed amount of fuel is stored on site. Elaborate safety measures are implemented to protect the electronic equipment, electric installations and working personnel against all sort of hazards like electromagnetic radiations, high voltage electric supply, possible lightening strikes, fire breakout and vandalism. BTS locations are determined according to service coverage requirements and estimated requirements of phone call traffic. Each BTS before installation is required to be approved by Pakistan Telecommunication Authority and FAB before construction. The criteria used in the approval process is based on a consideration of technical parameters, radio spectrum use, security considerations with respect to installed equipment, working personnel and other human beings who may come in contact with the facilities used. Recently environment issues like radiation effects and noise pollution have also been included in the approval process.

The BTS are of two types, i.e. green field and roof top type. The clearance of rooftop type site also involves examination of the building structure on which the tower rests. The Green field BTS generally entails installation of towers with bigger heights and need more service checks about safety of installed facilities and the environment. Each mobile company has been allocated a frequency band within which its mobile radio system operates. FAB has to certify that the frequency and the radio power limits are being observed and that there is no interference problem with the existing cellular mobile or other radio installations. Likewise each BTS location is also examined by the security agencies and Civil Aviation Authority and city governments for clearance. The approval procedure involves interacting with many departments, multi-tier bureaucratic channels and is lengthy and time consuming. The operators allege that delays in clearance adversely effects the rollout schedule of their expansion projects. While the objectives of the exercise are clear, and time is needed for complying with all relevant criteria, there is a strong case for cutting down the time period of approval. The unnecessary delays can be eliminated if all the concerned agencies perform their function within a prescribed period of time assigned for the purpose. Automation of the procedure can also reduce delays to some extent. Complete computerization of the process starting with launch of the request for clearance and including consultation with all the concerned agencies can help improve the situation and curtail the time taken for clearance. Time taken can be further reduced if number of sites for the installed facilities are decreased. This can be achieved by persuading the operators to share the sites with each other. Working with city government such common sites can be selected. This will do away with the problem of obtaining separate references from each operator from security, safety and environment point of view. The number of towers will reduce if operators adhere to the agreed co-location policy. Now that a major part of networks of all the five operators has been laid out and each company has reasonable number of subscribers, companies do not have to rush to overtake others in attracting subscribers. Serious thoughts should be given to making a co-location policy mandatory. Such an action will reduce number of locations and substantially reduce the clearance delays.

The Consultant further suggests to PTA to consider the following aspects before approval is accorded to Cellular Mobile Operators s for new Base Transmission Stations.

1. Aesthetics impact.
2. Possibility of accidental damage to life and property during heavy wind storms.
3. Adoption of internationally accepted guidelines on exposure of public to radiofrequency radiation emitted by each Base Transmission Station.
4. Base Transmission Stations should be installed away from community sensitive locations such as residential areas, schools, mosques and hospitals, etc.

Box-9.3
Policy Pitfalls

Under the policy pitfalls, the following comments are offered:-

The first point relates to licensing. It was decided as a policy that Local Loop Licensing will be carried out on the basis of regional licenses awarded on the basis of auction. After the passage of five years it should be noted that no worthwhile operator is available in Pakistan to provide local loop services on a reliable basis in competition with Pakistan Telecommunication Company Limited. There are only a few companies providing WLL services with the market share of only 33 percent. The companies are dogged by interconnected problems. From the hind sight it can be concluded that the award of licenses on a regional basis was not the best solution. It has failed to bring investment in Local Loop and only a small number of the companies have been able to launch services. Had the other alternative of giving country-wide licenses to only one or two parties been adopted, the sector would have attracted the multi national companies to Pakistan who would have made substantial investment and provided effective competition to PTCL. The subscribers would have benefited from the new entrants and enlarge competition would have forced PTCL to improve and expand its services.

Similarly in the long distance operations too many LDI licenses were issued. All of the licensees are small companies and many of them had to resort to non-standard practices for survival. The situation was further complicated by the start of LDI operation by some of the Local Loop and cellular mobile operators. While the overseas call rate had plummeted downwards this had led LDI industry to come has come under strain due to fall in the profitability.

The interconnect problems have become complex with the passage of time. The settlement issues of accounts have been complicated and led to defaults in payments and settlement. A fewer number of licenses given to credible players would have resulted in a better performance.

Recommending a solution is not easy as a lot of investment has already been made by the licensees in the shape of installations. PTA should endeavour to reduce the number of LDI players. Mergers and acquisitions be encouraged so that some of the operators can combine and acquire the capability to improve the domestic and international services.

Similarly over investment has been made in the long distance Optic fiber infrastructure. Most of fibre in the Trans country optic fiber links are lying dark. There is not much route diversity. A well planned route diversity would have provided connectivity to additional destinations and more reliable alternate routing. There is a clear cut case of duplicate investment which ultimately affects the financial health of the telecom companies and the cost of wasted are being passed on to the end users.

In conclusion, it needs to be mentioned that the telecom sector of Pakistan has done well in overall terms. We argue, however, that the suggestions given above can lead to substantial improvement in the performance of the sector.

On the regulatory side, it is proposed that appeals procedures and their disposal should be further streamlined. Creation of a portion of Secretary of the Authority to work as a focal point for this purpose is expected to facilitate the receipt and disposal of appeals. Such an institution in the PTA will lead to segregate functions of operation from strategic division in the Authority and hence would augment independence and impartiality of the regulation.

Box-9.4
Policy Impediments and suggestions

The components and equipment being used in the telecommunication industry is mostly imported which results in a large burden on the balance of payments. There is an urgent need to encourage the establishment of local industry to enable it to meet the needs of such equipment domestically. The establishment of domestic industries would save precious foreign exchange and create employment opportunities within the country. This would also lead to encourage the domestic entrepreneurships to invest in the newly established industries. As a consequence foreign investment in the sector would also increase.

The policy support measures for inducing this shift in the industrial sector are that while raw materials and components to be used in the industry would need to either duty free and/or be subjected to a lower level of import duty, the imported machinery should be subjected to a higher level of import duty. This would give incentive to the entrepreneurs to establish such industries domestically.

The package of incentives given to the operator companies has permitted companies to repatriate the profits of the companies so derive. There is, however, a need to induce the operators to deepen their presence in Pakistan. PTA may examine this issue and persuade the operators that some of the profit being currently repatriated by the operators may be used by companies for investment purposes locally. There is also a need to encourage the current operators to float shares on the Pakistan Stock Exchange.

Box-9.5
Tax Regime for Telecom Services

There are multiple taxes levied on various services of telecommunication particularly in the case of mobile telephony. Examples of the multiplicity of taxes are import duty on equipment, general sales tax and withholding tax on phone services, activation tax on SIMs of mobile phones, income tax on salaries of employees and profits of the phone companies. The combined impact of all of the taxes results in a tax rate of around 40 percent exclusive of the income tax.

It is recommended that a committee be set up by PTA to review the issue of the multiple taxes in the telecommunication sector. This committee should estimate the total burden of taxes on the sector and recommend measure to reduce the tax burden on the sector in line with the international best practices relevant to the case of a developing country.

Chapter-10

Conclusions and Recommendations

10.1 Main Findings

10.1.1 Micro level Findings

The findings from different surveys conducted by TEACH found that there is universal awareness, knowledge and use of different telecommunication services in rural as well as urban areas and among males and females in the country. It is an important reflection of the telecommunication industry and its past growth.

Furthermore, it was found that there is large unmet demand of various telecommunication services. A large proportion of respondents have indicated a desire for owning of FLL, WLL, Mobile and the Internet. Despite rapid growth of personal phones in the past, a dominant majority of survey respondents have expressed usefulness of PCO and/or payphone. This is largely due to the access to such services without incurring fixed investment to install the equipment for fixed phones and other telecommunication facilities.

The use of Internet and computer is reported by a small proportion of respondents. About half of the households have reported that they do not need to own a computer. Despite the limited ownership of computer, it was found that females and children are being attracted to using Internet.

The respondents who are employed and/or own a business of their own had reported that they would like to buy a mobile phone for not more than Rs.4,800. Only a small proportion had reported to pay more than Rs.10,000 for the mobile set.

Majority of the respondents acknowledged the accrual of various benefits of telecommunication services. These pertained mainly to the social aspect of life such as family cohesion and interaction with people from different walks of life. The respondents had also termed the role of telecommunication services as beneficial in fields like education and health.

In the economic field, respondents found the services to be beneficial for businesses/trades, employment, and for farm managements. In this context the role of mobile phone is considered as more useful than other means of telecommunication.

The respondents reported that there was a large reduction in the letter writing, face to face meetings and travel by (owning to) the use of mobile phone. Respondents were of the view that different telecommunication services had helped them in broadening their social circle and in prompt solution of day to day problems. They had also reported significant savings of time and transportation costs. Such savings had led to an increase in their net income.

The respondents belonging to business and the working group had reported benefit of an increase in sales and the turnover. They also reported facilitation in search of work and the livelihood besides some other benefits accrued from finding new customers increase in work efficiency, solving day to day problems, finding instant marketing information and identifying opportunities for increase in income from different telecommunication services particularly mobile phones. A small number of respondents have appreciated the benefits of LDI and calling cards.

The use of Internet by business and working group was mainly for e-mail and support in office work. Only a few had reported use of e-mail for enhancing business.

A number of respondents also pointed out various type of problems in the use of telecommunication services such as weak signals, speech not clear and frequent call disconnection. Such frequent problems highlighted the need for increase of coverage and improvement in the quality of service.

The majority of the respondents did not report any negative impact of the telecommunication services. Respondents using mobile has reported negative impact particularly an increase in expenses, use of mobiles while driving and snatching of mobile.

A large number of respondents had complained about the quality of service and a poor response from service provider companies urging for an improvement in network and attitude.

10.1.2 Macro level Findings

Telecommunication industry has shown an impressive growth in revenue, sizeable amount toward the national exchequer as taxes and duties.

Telecommunication is one of the main sector that has attracted substantial Foreign Direct Investment and its flow is likely to continue owing to unmet and future demand for all the telecommunication services.

Many major regional telecommunication operators like SingTel, Q-Tel, Omantel and China Mobile have invested in Pakistan and brought equity in local companies. The interest of regional operators signify market strength in Pakistan telecommunication sector.

Telecommunications development in the past has resulted in creation of direct and indirect jobs in large numbers. More opportunities of employment are expected as a result of foreseen future growth.

Although benefits of telecommunication services are recognized by all strata of population, it is necessary to launch further awareness campaign to

enhance the constructive use of these services to ensure larger socio economic dividends.

Telecommunication development is mainly financed from abroad. It is based on imported technology. Local value addition needs to be encouraged for reducing the dependence on foreign sources.

10.2 Recommendations

10.2.1 General

The telecommunications performs an important role in advancing economic and social welfare of the country. The telecommunications policy needs to fulfil the following objectives:

(a) To promote affordable access to advanced telecommunications services in all regions including urban, rural and remote areas;
(b) To enhance the efficiency of telecommunications markets and the productivity of the Pakistan economy; and
(c) To enhance the social well-being of Pakistanis by:
   - facilitating access to telecommunications by persons with disabilities;
   - maintaining public safety and security;
   - contributing in the protection of personal privacy; and
   - limiting public nuisance through telecommunications.

The following guidelines should be applied in implementing the telecommunications policy:

(a) Market forces shall be relied upon to the maximum extent feasible as the means of achieving the telecommunications policy objectives;
(b) Regulatory and other government measures shall be applied only where:

   - Market forces are unlikely to achieve the telecommunications policy objectives within a reasonable time frame, and
   - The costs of such measures do not outweigh the benefits; and

c) Regulatory and other government measures should be efficient and proportionate to their purpose and interfere with the operation of competitive market forces to the minimum extent necessary to meet the objectives.

The regulatory framework for Pakistan's telecommunication sector should rely on competition and market forces rather than on economic regulation, to the maximum extent feasible.

Control of anti-competitive conduct in telecommunications service markets should be guided by competition law principles, suitably modified to take into account the specific features of the telecommunications service industry.

A working group should be established comprising of members drawn from both the PTA and the independent experts. The working group should draw upon competition law principles and knowledge of the telecommunication industry. It should develop specific guidelines for the application of competition policy to the industry, including:

(a) Specification of the types of practices that could constitute abuse of dominance, and
(b) Guidelines for market definition and analysis of significant market power.

10.2.2 Tariff

Telecommunication service providers should continue to file tariff for services that are subject to the regulation by PTA. These tariff should be open to public inspection.

Tariff for regulated services should be subject to a negative disallowance process, in that they would automatically come into effect seven days after they are filed, unless they are suspended or disallowed by the PTA, in which case the PTA should provide:

(a) The reasons for a suspension or a disallowance, and
(b) An indication of when a final decision on a suspension will be made.

The regulatory framework should continue to require owners of essential wholesale facilities to make them available to competitors at regulated wholesale rates. Regulatory requirements to provide non-essential wholesale services or facilities should be phased out in order to provide increased incentives for innovation, investment and more widespread construction of competing network facilities.

10.2.3 Access Provision Charges (APC)

Provisions for APC should be reviewed keeping in view the interests of LL/LDI operators. The distribution of call termination charges by international carriers should be on percentage basis with respect to their expenses in terminating the call etc.

10.2.4 Dispute Resolution and sharing of facilities

The PTA should be entrusted with power to resolve disputes and order access to support structures constructed on, over, along or under public or private property of all descriptions. These access rights should be defined to include the

right to install, maintain, repair and operate transmission facilities and to support structures owned by electricity utilities, municipalities and other parties.

The PTA should be empowered to resolve disputes over the terms and conditions of access between telecommunications service providers or broadcasting distribution undertakings and third-party owners of support structures, including, but not limited to, support structures owned by electricity utilities, municipalities or other parties. Under this new regime, parties should be required to attempt to reach agreement on access, failing which the PTA should be empowered to resolve any disputes and order access on terms and conditions, including rates that are binding on both parties.

The PTA, prior to making an order to resolve a dispute involving access to support structures owned by an entity that is provincially regulated, should be required to consult with any other regulator that has already ruled on the relevant terms and conditions of access.

The PTA should have the power to resolve disputes and order access to public property of all description. These access rights should be defined to encompass the right to install, maintain, repair and operate all transmission facilities. The PTA's power to order remedial action should include access for the purposes of maintaining, repairing or operating transmission facilities, as well as constructing or installing them. The PTA should also be empowered to establish and enforce principles of general application that can be used by parties to negotiate broad-based municipal access agreements, which can then be brought to the PTA for review or dispute resolution if parties are unable to reach agreement.

10.2.5 Spectrum Policy

The Government should develop a new spectrum policy to provide clear direction to the PTA in exercising its new authority to manage and regulate Pakistan's radio spectrum. The new policy should ensure that the following areas are addressed:

(a) Availability of adequate spectrum to meet demands for deployment of fixed and mobile broadband networks across Pakistan,
(b) Availability of licensed and license-exempted spectrum for emerging telecommunication services,
(c) Reliance on market-based approaches to spectrum management as much as possible,
(d) Establishment of market-based exclusive spectrum rights (i.e. ability to buy, sell and lease spectrum holdings) and elimination of barriers to the development of secondary markets in spectrum,
(e) Recovery and "reframing" of previously assigned spectrum that is unused or underutilized in order to accommodate new services,
(f) Review of current license fees to correct fee imbalances that may exist among service providers, separating where practical cost-recovery

fees from those fees charged for the use of a limited public resource, and applying market-based pricing for non-auction licenses,

(g) Streamlining and standardization of licensing processes,

(h) Continued use of regulatory mechanisms such as spectrum caps (aggregation limits) where spectrum is scarce in order to provide an opportunity for new entrants to acquire spectrum and for Pakistanis to have an expanded choice of service providers.

Provisions should be made to withdraw/cancel spectrum, even in use, for optimal/efficient use to adopt latest/modern technologies of the time.

WLL operators should also be allowed to provide 3G services subject to facilities available within their installations.

Spectrum Administration Fee should not be a burden on CMOs only. It should be calculated for actual FAB expenses and be charged from all the wireless operators and other users on the basis of their usage and revenue earned by them.

FAB and the PTA should form a joint working group to plan the integration of spectrum regulation, management and related functions and to develop a mechanism for close coordination between the two organizations on spectrum policy development.

Box-10.1
Frequency Allocation Board

Frequency Allocation Board (FAB) superseded the Pakistan Wireless Board in the process of the restructuring of Telecommunication sector in 1996. Pakistan Wireless Board was earlier managed by the T&T Department and consisted of members from Ministry of Information, Ministry of Defence, Ministry of Interior and a few from other ministries. Later the Chairmanship of the Board was passed on to Additional Secretary, Ministry of Communications on an ex-officio basis. FAB is now a full-fledged regulatory body with Secretary as its ex-officio chairman and has on its board representatives from Ministry of Information & Broadcasting, Defence and Interior. Executive Director, FAB is the Chief Executive Officer of organization. Applications for frequencies are routed through PTA. The Board is now administratively attached to Pakistan Telecommunication Authority (PTA) as its financing is provided by PTA which receives all payment from licensees on account of licence fees including for frequency allocation and use. Currently policy makers are considering ways to make FAB powerful. Key questions are whether FAB has the latest technology to ensure use of frequency bands as planned and according to allocations; does it have enough manpower and power to monitor and apprehend the delinquents. Second topic being debated concerns ability of FAB to deal with all sub sectors like defence, law enforcement agencies, broadcasting on equal footing alluding to complaints that in its present position in the hierarchy FAB is tilted in favour of telecommunication sector. Third issue relates to ability of FAB to face future challenges of convergence. FAB has done reasonably well. A study is, however, needed for in-depth analysis of its needs. There is no limit to achievement of excellence. The study can weigh the pros and cons of expanding the organization as very large multidiscipline bodies are generally infested with bureaucratic hurdles. At this stage suffice it to say that PTA and FAB's role needs to be made more effective and harmonious.

10.2.6 Information Communication Technology (ICT)

The Government should develop and implement a national ICT adoption strategy in collaboration with key federal and provincial government colleagues as well as high-level representatives from the private, public and not-for-profit sectors, with the following objectives:

(a) Strengthening ICT adoption by Pakistani businesses, particularly small and medium-sized enterprises,
(b) Strengthening the links between ICT sector, research and development and ICT adoption,
(c) Enhancing ICT adoption by governments,
(d) Promoting development of ICT adoption skills on a coordinated national basis,
(e) Improving security, confidence and trust in the online environment,
(f) Achieving ubiquitous access to broadband networks and services.

The Government should mandate the PTA to:

(a) Benchmark Pakistan's performance in the adoption and effective use of ICTs;
(b) Conduct policy research and analysis on issues related to ICT adoption in the private and public sectors, in order to inform discussions and support new initiatives related to ICT adoption;
(c) Coordinate policies, programs and other measures aimed at promoting the smart adoption of ICTs within the federal government with the provinces to avoid overlap and duplication of effort, and;
(d) Be a lead advocate for the effective use of ICTs, particularly among small and medium-sized enterprises.

The government should continually monitor technological developments in the telecommunications sector and assess their economic and social implications.

10.2.7 Universal Service Fund (USF)

Federal government policy should recognize that market forces will continue to expand the availability of broadband access across the country.

Use of USF should ensure that broadband access is made available to Pakistanis in areas where commercial operators are not providing service and are unlikely to do so for economic reasons.

The budget allocation for the subsidy programs should be based on the projected costs of providing broadband connectivity to the remaining unserved areas of Pakistan. The funds should be assigned based on the projected cost of achieving such connectivity in each region.

The broadband expansion initiatives should be implemented only after coordination with those involved in other broadband expansion programs of the private sector, federal government departments and agencies as well as other levels of government.

The USF administrators should develop broadband expansion initiatives in consultation with community members and organizations who can help define community access needs.

When subsidies are provided to network operators to expand backhaul networks into previously un-served areas, the operators should be required as a condition of obtaining the subsidy, or by regulation:

(a) To provide transmission services to other local service providers who wish to serve the areas, and
(b) To provide these services at rates that are discounted to reflect the subsidies received.

Auctions should be run for large service areas at a suitable time that lead to increase efficiencies of service provision. These service areas should be designated in consultation with provincial governments, after assessing current and planned coverage of existing broadband network operators.

In most cases, separate auctions should be held for the backhaul network and local access facilities within each un-served area. Such auctions should generally be held at the same time.

The USF administration should enter into contracts for access and backhaul services with the service provider who:

(a) demonstrates it has the necessary technical and financial qualifications to successfully deploy and operate the broadband backhaul or access service for the duration of the contract, and
(b) submits the lowest bid for the subsidy it requires to implement and operate the project.

10.3 Telecommunication Manufacturing Industry and R&D Fund

Manufacture of telecommunication equipment is another area needing attention of policy makers. Public sector company “Telephone Industries of Pakistan (TIP)” has almost stopped providing equipment, “Carrier Telephone Industries (CTI)” after privatization has also become dormant in manufacture. There is no worthwhile setup for manufacture of mobile handsets, demand for which is increasing day by day. Public sector may examine reviving the manufacture industry in the country. It could be a worthwhile use of part of R&D Fund of Ministry of Information Technology.

Lastly, it will be appropriate to mention and caution against chances of duplication or overinvestment in highly deregulated environment and point out the need to economize and rationalize resources (large part of which may be in foreign exchange). Already excessive money has been spent on mobile infrastructure because of lack of cooperation on co-location. Same practice is apprehended in other projects like optic fibre links etc.

It seems appropriate at this juncture to take a look at policy of public sector role in telecommunication. There are two organizations namely National Telecommunication Corporation (NTC) and Special Communications Organization (SCO) providing telecommunication services. The mandate of former is to meet the telecommunication needs of the government and defence services while SCO operates in the AJK and Northern Areas. SCO's 25 year monopoly has finally ended and private parties have been given licenses to operate FLL, WLL & mobile services in competition with SCO. From strategic point of view it is necessary that these two organizations may continue to perform their assigned role.

However, to enable these organizations to compete with private sector additional financial and administrative autonomy needs to be given to them under law. It is further recommended that responsibility for establishing inter-country telecommunication links be entrusted to them where deemed expedient. NTC has a big responsibility for modernizing the operation and introduction of latest services in government organizations and it should preferably avoid entering into non-government market.

Vol-2

Socio-Economic Impact of Telecommunication Growth and Indicators Forecasting

Pakistan Telecommunication Authority

:

Telecom Engineering And Consultancy House
(Pvt) Limited Islamabad

Foreword

In Volume-I some of the micro level findings of the survey related to rural, gender, poor and SME were discussed. The results of the Focus Group Discussion were also included. In addition Volume-1 also discussed macro level findings and issues such as forecasting of future demand of telecommunication services, investment needs, employment generation, economic implications, regulatory frame work and conclusions and recommendations.

Volume-II discusses the micro level findings related to non-targeted and targeted surveys of household and business respondents. It discusses the awareness, knowledge, ownership, purpose and intensity of use of different telecommunication services. The user behaviour, habits, place of use, their future requirements and problems and disadvantages perceived by them has been brought out. The impact of telecommunication services on the various aspects of life related to social as well as economic activities has been analyzed and assessment made and indicated.

Chapter-1

Non-Targeted Survey

1.0 Introduction

The Pakistan Telecommunication Authority (PTA) Project, among other things, had asked the consultants to carry out a Non-Targeted Survey of 10,000 respondents. The main objective of this survey was to solicit general information about awareness, pattern of ownership and use of major telecommunication services. A one page questionnaire was designed and distributed to the respondents who were asked to return the filled-in questionnaires.

Fifteen thousand questionnaires (14,000 in Urdu language and 1,000 in Sindhi language) were distributed among the prospective respondents. The basic rational was to provide an opportunity to respondents to answer different questions according to their own judgments about characteristics of different services. A total of 13670 questionnaires were received of which only 10604 were considered suitable for analysis. The remaining for 3066 questionnaire were either not completely filled or had contained lot of errors for proper analysis. One thousand three hundred and thirty (1330) questionnaires were not returned.

The questionnaires were distributed randomly using convenience sampling procedure. The universe of the survey comprised rural and urban areas of all the provinces, Azad Jammu & Kashmir (AJK) and Federally Administered Northern Areas (FANA). The survey was coordinated by trained personnel (supervisors and enumerators) who had experience of conducting surveys. The enumerators were fluent in speaking the local languages.

The questionnaire was pre-tested incorporating suggestions of the PTA. The persons assigned for distribution of non-targeted Questionnaires were briefed about the aims and the objectives of the Survey. Multiple sources of information were used to solicit the information. The enumerators distributed the questionnaires in different areas. The completed questionnaires were collected in a day or so. The information was also collected using the students enrolled in schools and colleges. The questionnaires were filled from the parents of the students and / or the head of the household or any other responsible person in the household. Some of the information was also collected from members of local bodies/town committees. The questionnaires were edited before data entry and tabulation

About one-third of respondents (35 percent) belonged to rural and 65 percent belonged to the urban areas. The breakdown of respondents by provinces/regions is given in Table 1.1 and the survey methodology is given in Chapter-4.

Table-1.1
Percentage Distribution of Respondents by Region, Pakistan, 2008

(Percent)

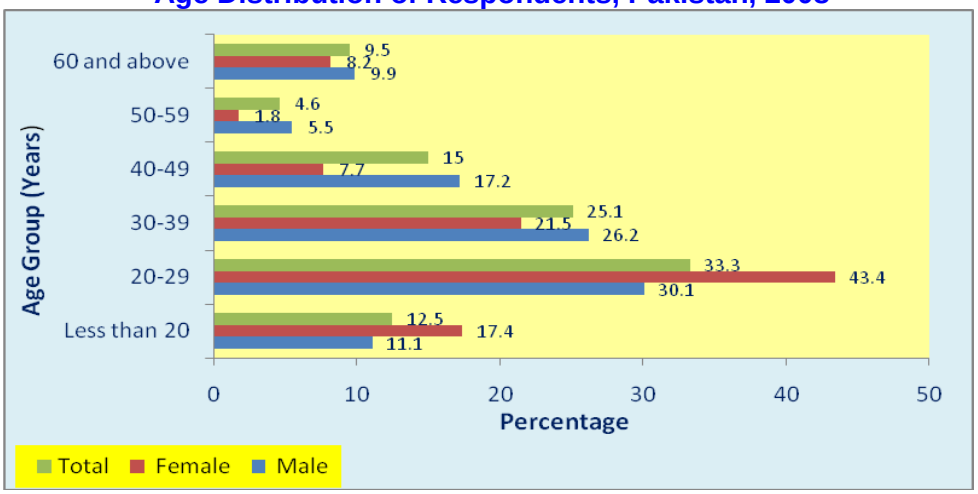
Province	Distribution
Punjab	56.0
Sindh	20.4
Balochistan	6.9
NWFP	14.6
AJK/NA/FATA	2.1
Total	100.0
Number	10604

Source: Annex Table 1.1

1.1 Findings of the Non-targeted survey

Slightly less than three-quarters (72 percent) males and more than one-quarters (28 percent) females replied to the questionnaires. The mean age of respondents is reported as 36 years and the medians age is reported as 30 years. In rural area the mean and median ages of respondents are reported as 38 and 32 years respectively, while in urban area the corresponding mean and median age is reported as 35 and 30 years respectively. The mean age of males and females respondents are 37.6 and 32.2 years respectively and the median age of males and females respondents are 32 and 26 years respectively. It should be noted that female respondents under 30 years of age are relatively younger (61 percent) than male respondents (41 percent). The age distribution of respondents is given in the following figure:

Figure-1.1
Age Distribution of Respondents, Pakistan, 2008



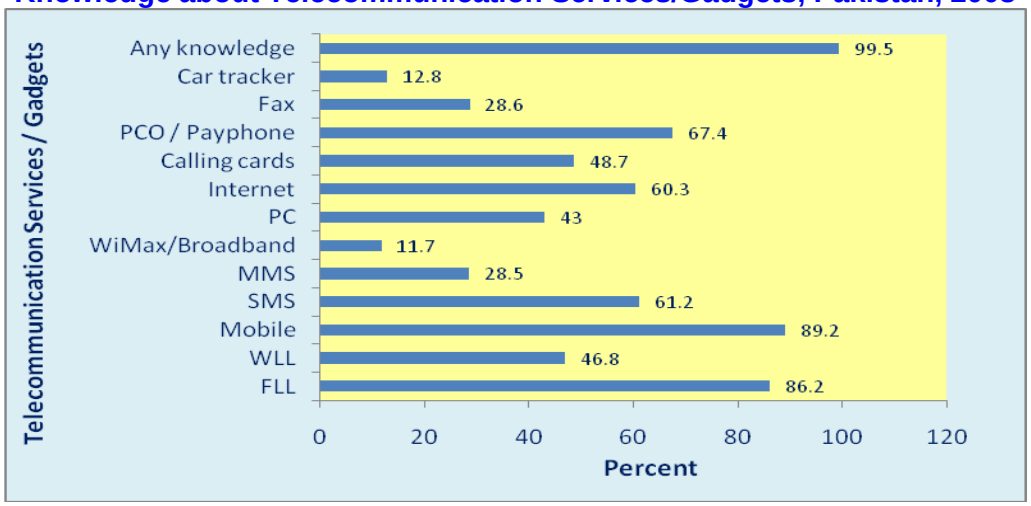
Source: Annex Table 1.2, 1.3

1.1.1 Knowledge of Telecommunication Services

There is universal knowledge / awareness (100 percent) of at least one or more of the telecommunication services by sex as well as by rural - urban residence. When awareness level is classified by different telecommunication services then it is noted that urban respondents happened to have slightly more knowledge than the rural respondents. The highest knowledge reported for mobile

phone (89 percent). The least knowledge has been reported for Car Tracker (13 percent) and WiMax / Broadband (12 percent). The similar pattern was found in rural, urban areas and in all the provinces / AJK&FANA. The knowledge of various telecommunication services /gadgets as reported by respondents is given in the following figure:

Figure-1.2
Knowledge about Telecommunication Services/Gadgets, Pakistan, 2008

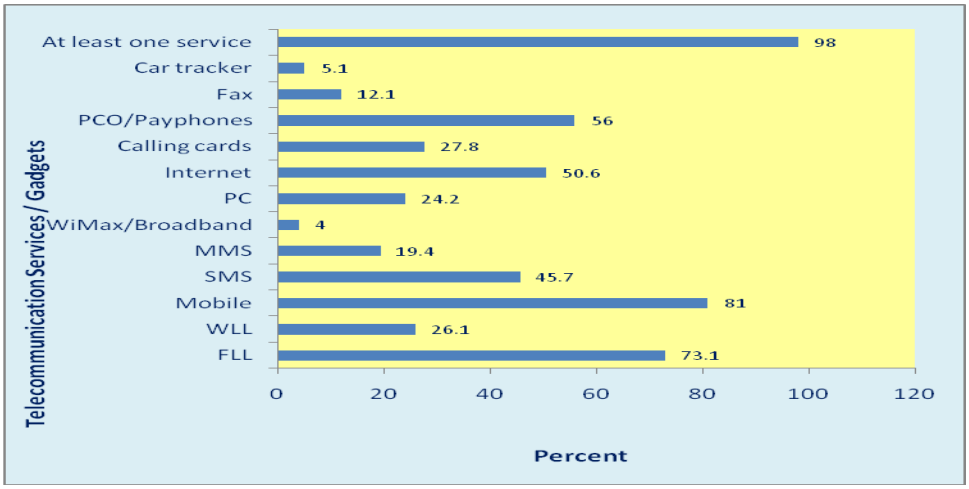


Source: Annex Table 1.4, 1.5

1.1.2 Use of Telecommunication Services

Almost all the respondents (98 percent), both males and females, indicated using at least one of the telecommunication services. Not much of difference in use of at least one or more of telecommunication services by rural urban residence was noticed. The highest use of any of the telecommunication services was for mobile phone (81 percent) and fixed line phone (FLL) (73 percent) followed by PCO (56 percent). The least use was for WiMax / Broadband (4 percent) and Car Tracker (5 percent) both males and females. The extent of use of various telecommunication services is given in the following figure:

Figure-1.3
Use of Telecommunication Services / Gadgets by respondents, Pakistan, 2008

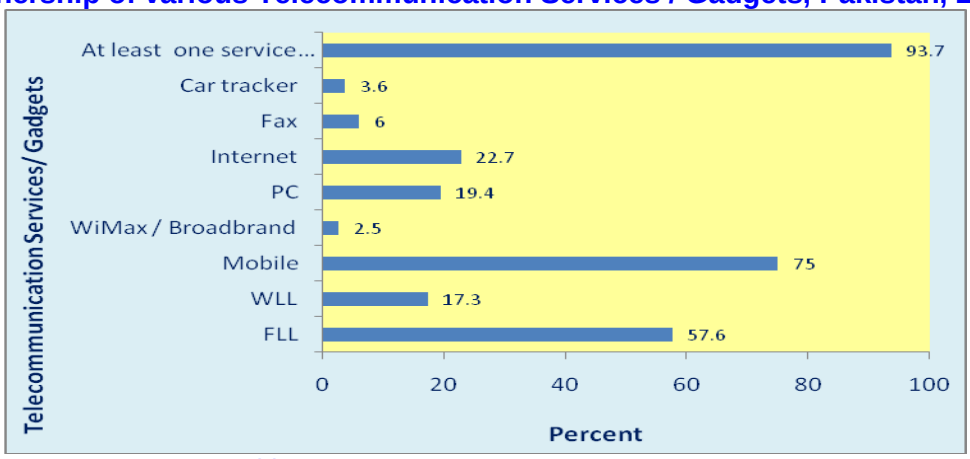


Source: Annex Table 1.6, 1.7

1.1.3 Ownership of Telecommunication Gadgets

About 94 percent of respondents (93 percent males and 95 percent females; 95 percent urban and 92 percent rural) reported to have owned at least one or more telecommunication services. Three-quarters of the respondents reported to own mobile phone while 58 percent had owned fixed line phones. One-fifth (19 percent) of respondents reported to own PC. Internet is owned by 23 percent of respondents. Figure-1.4 shows the ownership of various telecommunication services/gadgets.

Figure-1.4
Ownership of various Telecommunication Services / Gadgets, Pakistan, 2008

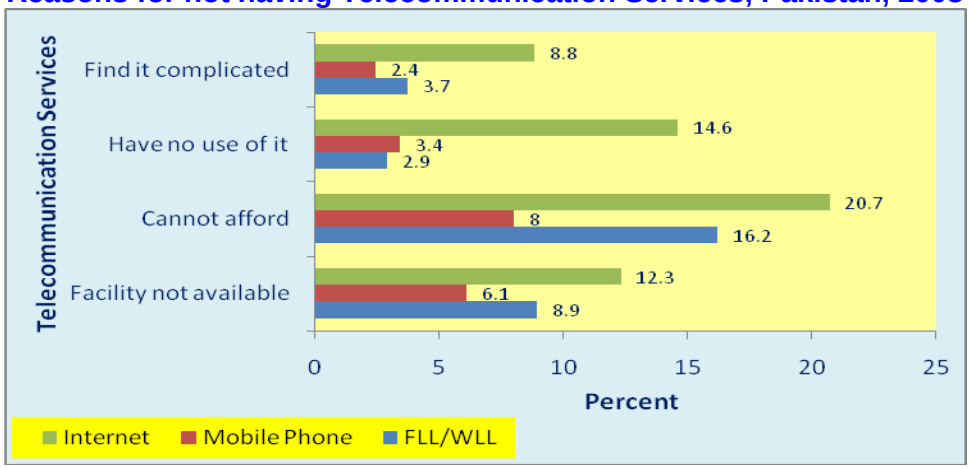


Source: Annex Table 1.8, 1.9

1.1.4 Reasons for not owning different Telecommunication Services

Of those who did not own services; one-sixth (16 percent) reported that they could not afford fixed line services, 8 percent reported the same reason for mobile phone and 21 percent reported similarly for internet. The respondents reporting no use of it varied from 3 percent for FLL and mobile each to 15 percent for internet. The details of not owning different telecommunication services are given in the following Figure-1.5:

Figure-1.5
Reasons for not having Telecommunication Services, Pakistan, 2008

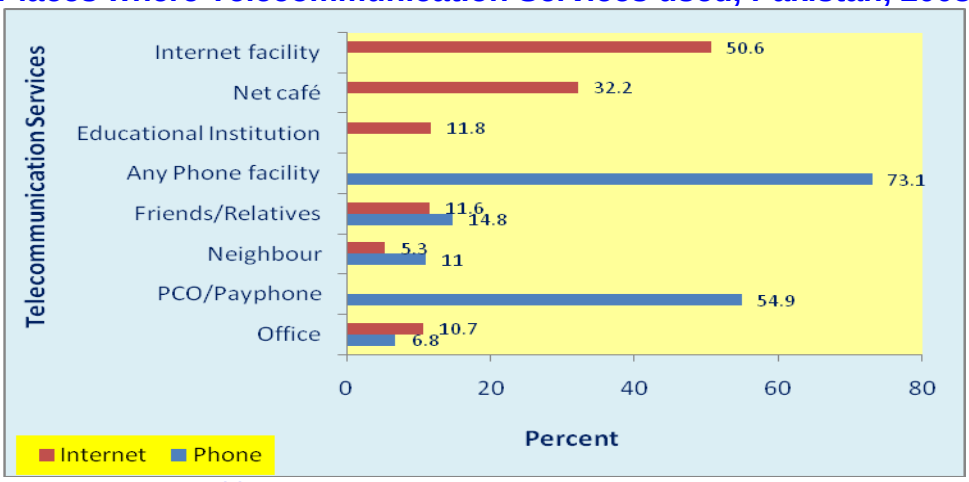


Source: Annex Table 1.10 to 1.15

1.1.5 Places where facilities used

Of the respondents not having any phone facility at home, 55 percent used PCO to make calls, 15 percent used relative's/friend's facilities and 11 percent used neighbours' facility. One-third of (32 percent) respondents availed Net café facility for internet, 12 percent used friends/relatives and educational institutions' facilities each; and 11 percent used internet at offices. The details are given in the Figure-1.6:

Figure-1.6
Places where Telecommunication Services used, Pakistan, 2008

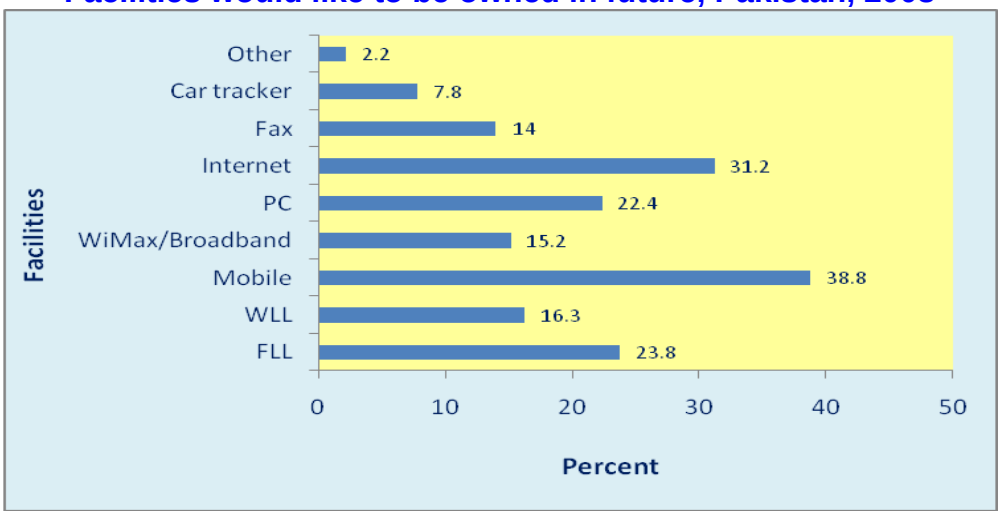


Source: Annex Table 1.16 to 1.19

1.1.6 Potential demand for telecommunication services in future

On an average, a respondent reported his / her desire to be owning different telecommunication services in future at 1.5. Regarding ownership of phone in future; two-fifths (39 percent) of the respondents wanted mobile phone and one-quarter (24 percent) wanted FLL in future. 31 percent wanted internet and 22 percent wanted to have PC in future which is shown in the following Figure-1.7:

Figure-1.7
Facilities would like to be owned in future, Pakistan, 2008

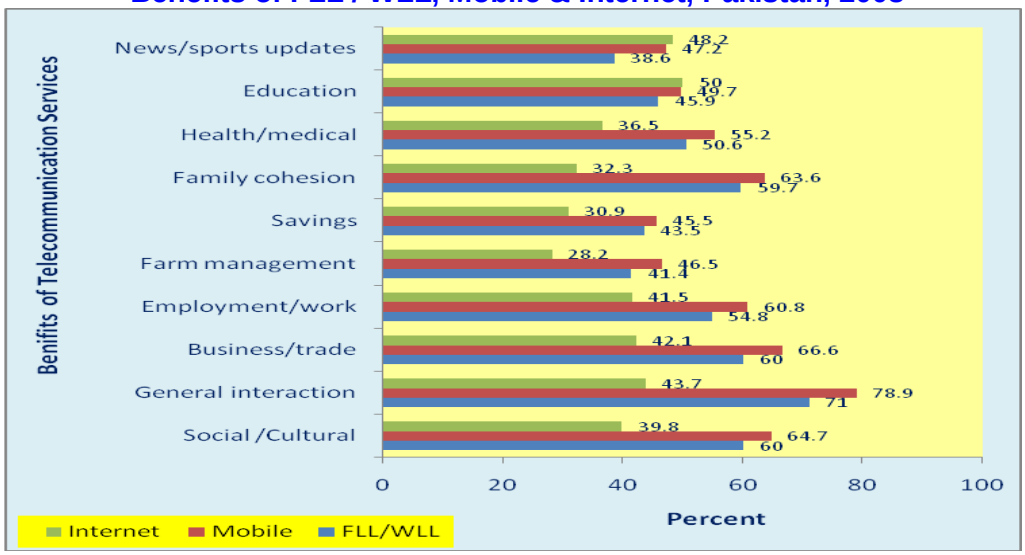


Source: Annex Table 1.20, 1.21

1.2 Benefits of telecommunication services

The extent of benefits of FLL/WLL, mobile phone and internet as reported by the respondents are given in Figure-1.8:

Figure-1.8
Benefits of FLL / WLL, Mobile & Internet, Pakistan, 2008



Source: Annex Table 1.22 to 1.27

1.2.1 Benefits of FLL/WLL phone

On an average one respondent reported 5 different benefits of FLL/WLL. The findings indicated that 71 percent respondents reported that Fixed Land Line (FLL) is beneficial for general interaction, followed by (60 percent) for social / cultural and family cohesion and business/ trade benefits each. More than half (55 percent) and (51 percent) respondents reported that it is beneficial for employment/ work and health/ medical use respectively. The business/trade and employment/work benefits were reported more by the working population (20-59 years of age). Females reported more family cohesion benefits than males. The details are shown in Annex Tables-1.22 and 1.23.

1.2.2 Benefits of Mobile Phone

Mobile phone users, on an average reported about 6 different benefits of this facility. About four-fifths (79 percent) of the respondents reported to have been benefited through general interaction; whiles two-thirds (67 percent) were benefited through business/ trade and almost 64-65 percent had social / cultural and family cohesion benefits. For more than half of the respondents, it was beneficial for health /medical and education use. The benefits for business/trade, employment and family cohesion were reported more by younger persons of age. 20-39 years of age compared to other ages of mobile users. The details are given in Annex Tables-1.24 and 1.25.

1.2.3 Benefits of Internet

The internet users on an average had reported 4 different benefits. The highest (50 percent) benefit was reported for education purposes. The education

benefits were reported at 56 percent by youth under 20 years of age followed by other ages. Its benefit was reported more by females than males. It was followed by news/sports (48 percent) general interaction (44 percent) business /trade (42 percent) employment /work (42 percent) and social and cultural benefits (40 percent). The details are given in Annex Tables-1.26 and 1.27.

Chapter-2

Targeted Survey (Business)

The Term of Reference had required to carry out a Targeted Survey of 5000 respondents. Four-fifths (80 percent) of sampling was to be directed to households and one-fifth (20 percent) to business entities. The sample size of the survey of business and working concerns was increased to 1,171 as (against a target of 1000) through out in the country. More than half (52 percent) of the respondents were from Punjab including Islamabad, about one-fourth (24 percent) from Sindh, 15.5 percent from NWFP, 5.4 percent from Balochistan and 3.5 percent from AJK and FANA. (Annex Table 4.2)

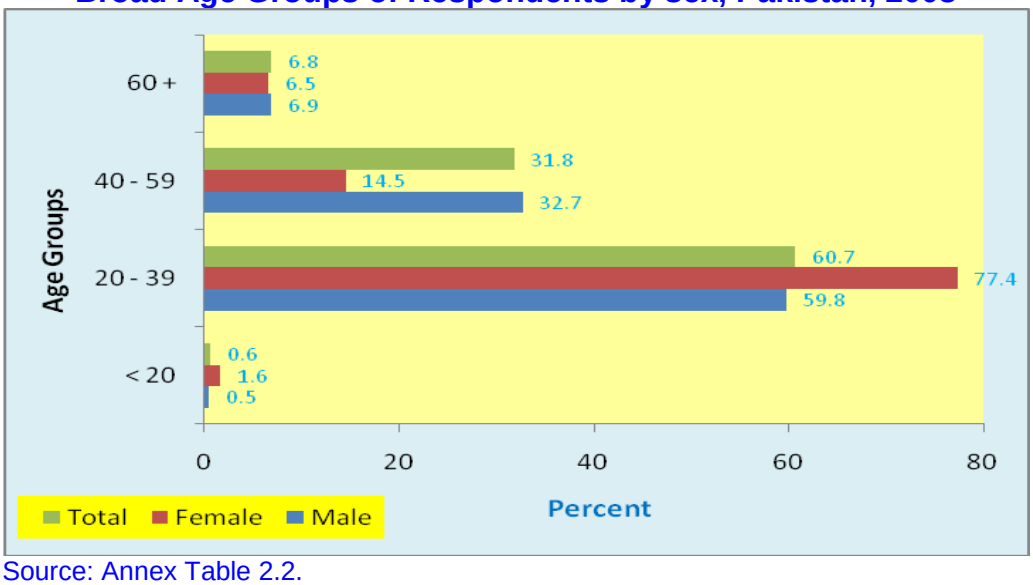
Twenty nine percent of business/working concerns were covered in rural area and the remaining 71 percent were covered in urban area (64 percent in major urban areas i.e. big cities and 6 percent in other urban areas i.e. small cities and towns). The Survey Methodology is given in Chapter-4.

2.1 Background Characteristics of Respondents

2.1.1 Age

Among the business/working respondents, 95 percent were males and 5 percent were females. The mean age of respondents is reported at 39 years (39.4 years for males and 34.5 years for females). The median age for males and females is reported at 36 and 29 years respectively. This shows that female business / working respondents were relatively younger than the male respondents. The broad age groups of respondents are shown in the following Figure-2.1:

Figure-2.1
Broad Age Groups of Respondents by sex, Pakistan, 2008

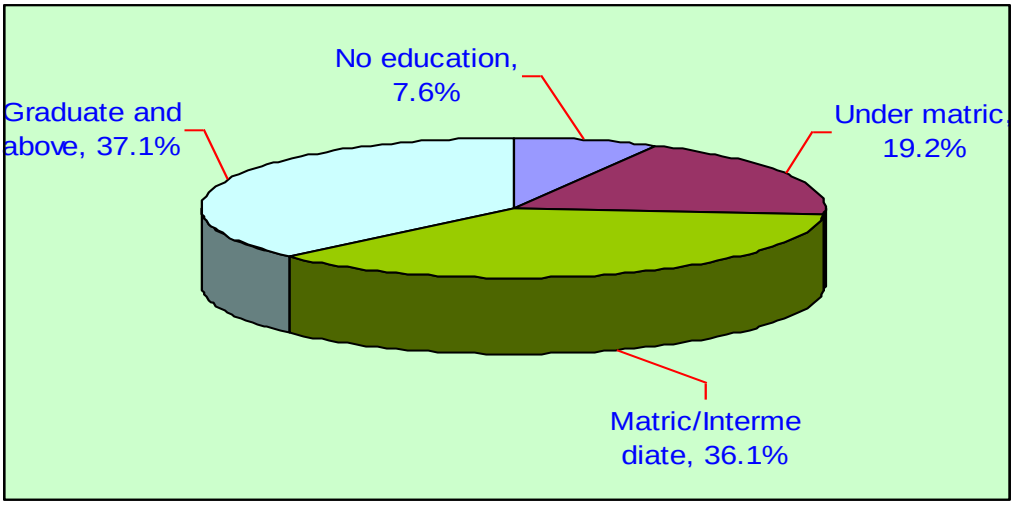


Source: Annex Table 2.2.

2.1.2 Educational Status

Around less than two-fifths (37 percent) of the respondents were graduate and above, while more than one-third (36 percent) had matriculation/intermediate level of education. This shows that almost three quarters of the business / working respondents had more than 10 grade education. One-fifths (19 percent) had below matric education while eight percent respondents reported to have received no education. The educational qualification of the respondents is shown in the following Figure-2.2:

Figure-2.2
Major Educational groups of respondents, Pakistan, 2008

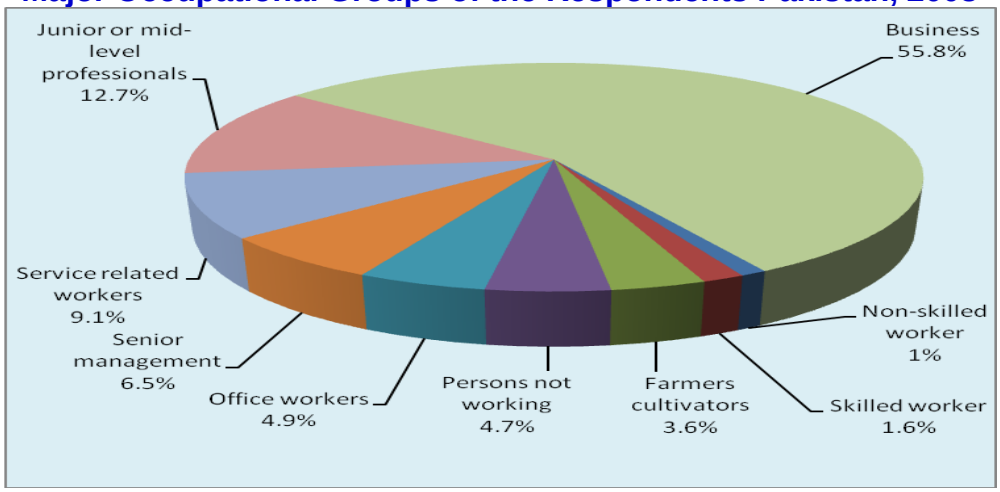


Source-Annex Table 2.3

2.1.3 Occupations

The percentage distribution of respondents by the major occupational group shows that more than half (56 percent) of the respondents were engaged in business. Figure 2.3 gives the detailed information.

Figure 2.3
Major Occupational Groups of the Respondents Pakistan, 2008



Source: Annex Table 2.4

2.2 Main findings

2.2.1 Use of Telecommunication Services

Almost all the respondents (99 percent) used at least one facility, while 95 percent, reported using mobile phone, around three-fifths (57 percent) reported using FLL phone and 18 percent reported using WLL. Half of the respondents (51 percent) used PCO / pay phone in case the phone facility was not available. As is expected that the use of various phones facility is reported more in urban than in rural area. The breakdown of the facilities used is given in the following Table-2.1:

Table-2.1
Facility Used if the Respondent Want to Phone Someone, Pakistan, 2008

(Percent)

Type of Facility	Use
PCO/Pay Phone	50.6
Neighbour	5.7
Relatives/Friends	10.3
Office	16.2
At least one facility use	99.4

Source: Annex Table 2.5 and 2.6

The highest use of PCO/Pay phone is reported in Sindh (78 percent) followed by NWFP (74 percent) and the least in Balochistan (8 percent).

2.2.2 Future desire for phone

Almost half of the respondents (48 percent) wanted to have a Telephone connection in future. The demand for urban and rural area is reported by 44 and 56 percent respectively. However the demand for mobile phone (35 percent) is particularly more in rural area. It means that coverage needs to be extended to rural and far flung area. Relatively higher demand is indicated in AJK (56 percent) as such services have been introduced only recently (Annex Table 2.7). Twenty-nine percent wanted to have mobile phone and another 19 percent wanted to have FLL/WLL in the future. One out of eight respondents (12 percent) mentioned that they do not want any of the gadgets. This shows that the potential demand for telecommunication services will continue to increase in the coming years.

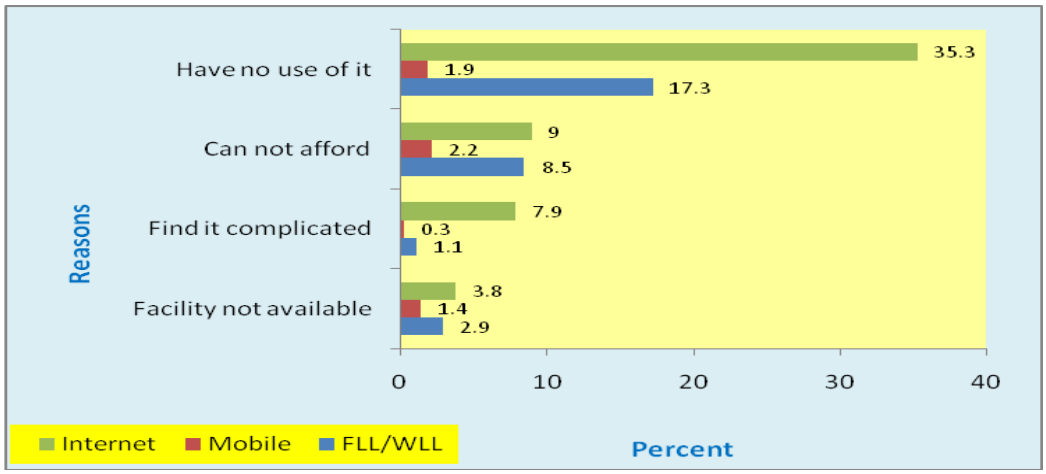
2.2.3 Reasons for not having phone in future

Of respondents who replied that they do not want to have FLL/WLL phone in future, 17 percent reported that they do not have any use of it and 9 percent reported that they cannot afford the facility. Only three percent reported that facility is not available to them. Almost 2 percent of the respondents reported of not having mobile phone in future.

Regarding internet, more than one-third (35 percent) of the respondents reported that they do not have any use of such services, 9 percent said that they can't afford it, while 8 percent reported that it was a complicated technology. Six

percent mobile phone users reported various reasons for not having. Detailed information is given in the following Figure-2.4:

Figure-2.4
Reasons for not having Telecommunication Services in future, Pakistan 2008



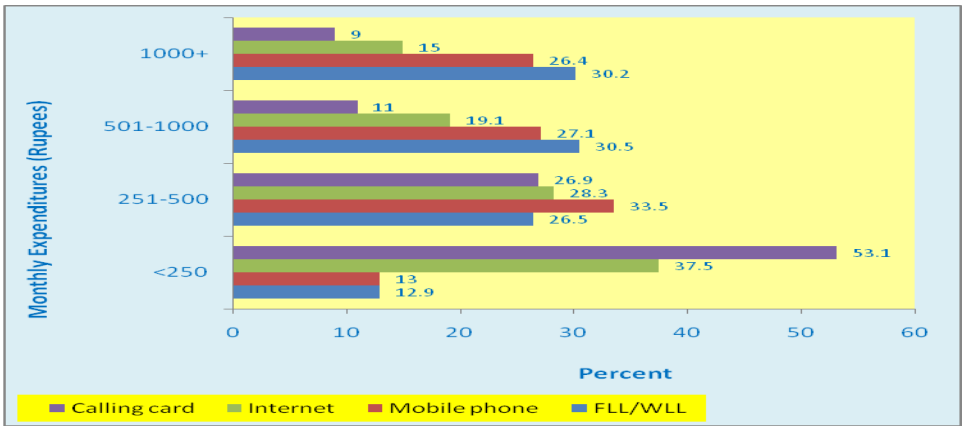
Source: Annex Tables 2.8 to 2.10

In view of the findings, it needs to be stressed that efforts should be directed to those areas where such services are not available particularly in far flung remote areas of the country.

2.2.4 Monthly Expenditure on Telecommunication Services

Two-fifths (40 percent) of the respondents using FLL and WLL, three-fourth of the internet users and almost nine out of 10 calling card users did not report the monthly expenditure for the use of such services. Only 6 percent mobile users did not report the monthly expenditure. For who reported the expenditure of telecommunication services, Figure-2.5 shows the distribution of expenditures by different telecommunication services and gadgets.

Figure- 2.5
Monthly Expenditure on Telecommunication Services/Gadgets, Pakistan, 2008



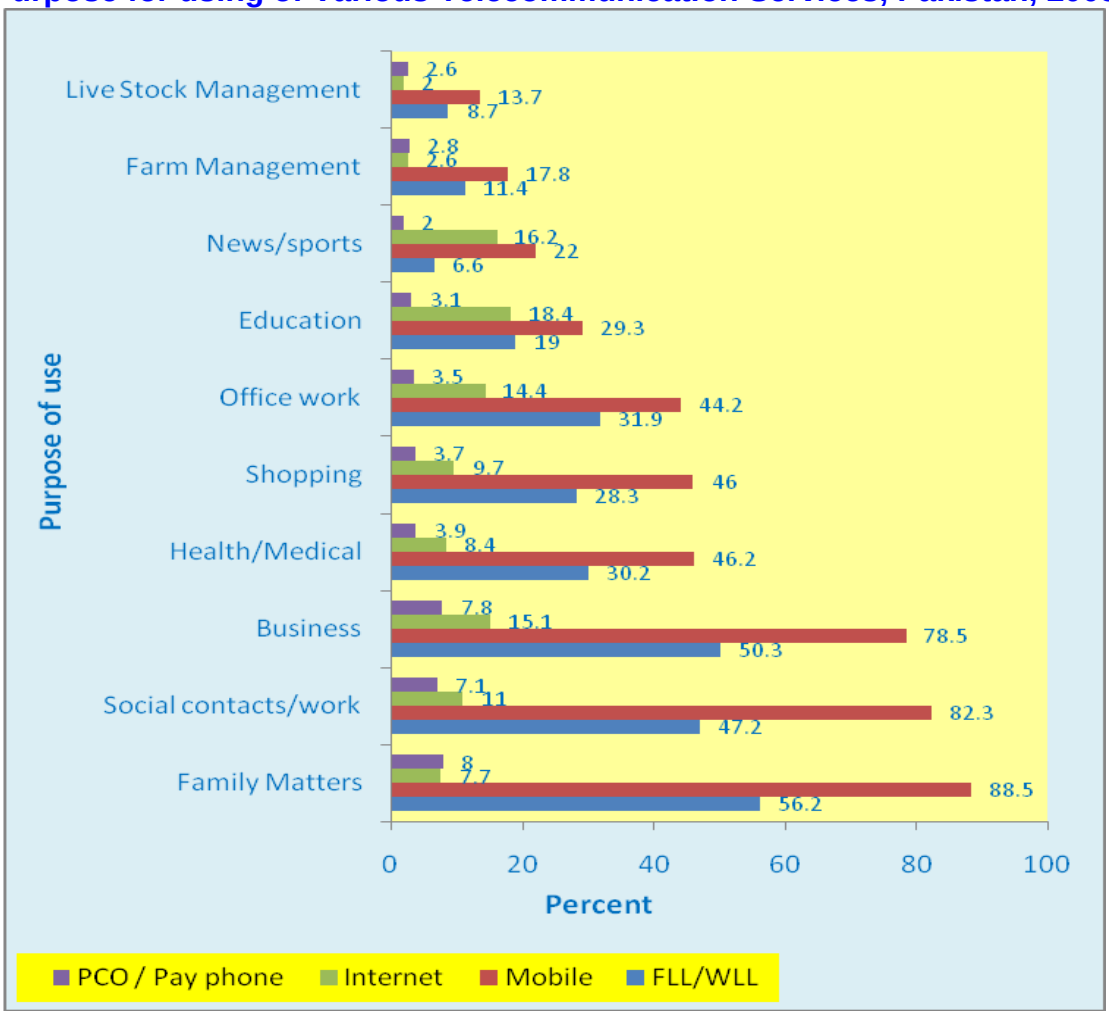
Source: Annex Table 2.11

A very low proportion (13 percent) of FLL / WLL and mobile phone users spend Rs.250 or less per month, whereas internet and calling card users spend a higher proportion Rs. 250 and below per month. Those spending Rs. 1000 and more per month, their portion is the highest among FLL / WLL and mobile users.

2.2.5 Purpose for using Telecommunication Services

The respondents gave various reasons for telecommunication use. The details are given in the following Figure-2.6:

Figure-2.6
Purpose for using of Various Telecommunication Services, Pakistan, 2008



Source: Annex Tables 2.12 to 2.15

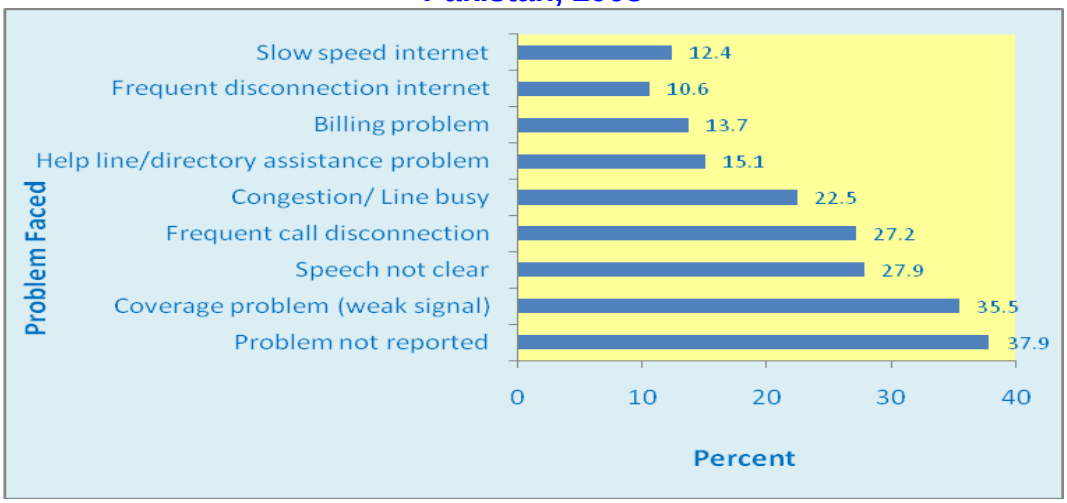
On an average, a respondent reported 2.9 different purposes for making FLL/WLL Calls. The mobile phone users on an average reported more than 4.6 different reasons of making calls. The internet users gave on an average one reason of its use. The majority of the calls were related to family matters; 88 percent in case of mobile phone and 56 percent in case of FLL/WLL. Mobile phone for social contacts/work (82 percent) and for business/trade (79 percent) purposes was also mostly used. The use of FLL/WLL is also common for Business (50

percent) and social contact (47 percent). The use of internet is the highest (18 percent) for education purposes followed by news, sports, business and office work. The PCO is also used mostly for farming matters, business and social contacts.

2.2.6 Problems faced by Telecommunication Users

The respondents on an average gave 2 different problems being faced while using telecommunication services. The detail is given in the following Figure-2.7:

Figure- 2.7
Respondents Problem faced while using Telecommunication Services, Pakistan, 2008



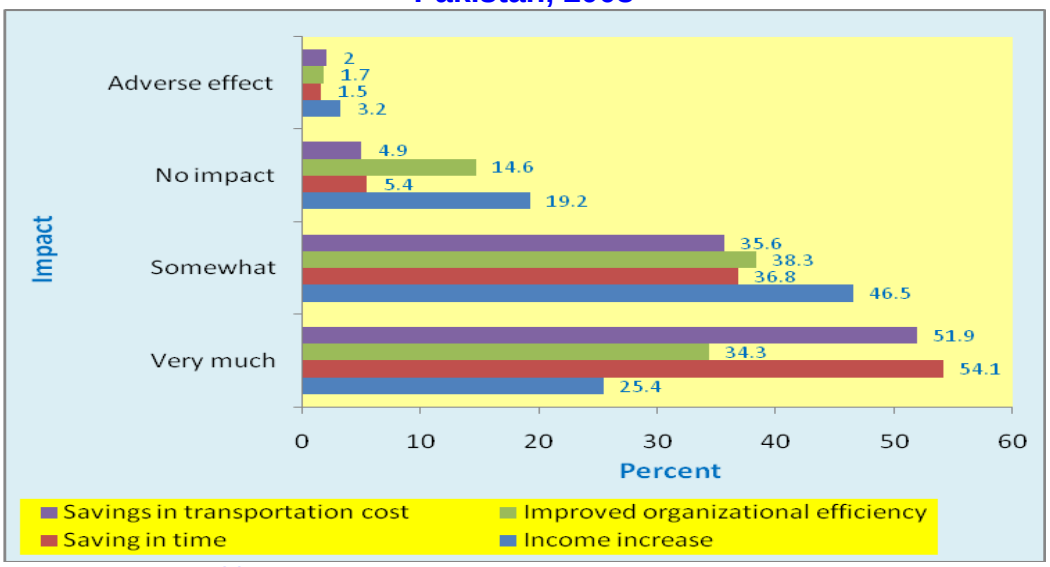
Source: Annex Table 2.16

Almost two-fifths (38 percent) of the respondents faced no problem. The coverage (weak signals) was reported to be the major problem (36 percent) which was the highest (89 percent) in Balochistan and AJK/FANA (51 percent) followed by speech not clear (28 percent), those facing frequent call disconnection were reported at 27 percent. The congestion/line busy was reported at 23 percent in the country. This problem was reported the most (33 percent) in Sindh followed by Balochistan (29 percent) as seen in Annex Table 2.16. Efforts need to be devoted to minimise and reduce such problems to make optional use of such services particularly in remote and far flung areas.

2.3 Telecommunication services impact on various aspects of life

The respondents gave various socio-economic impacts of telecommunication services/ gadgets on their day to day life. These are given in the following Figure-2.8:

Figure- 2.8
Telecommunication Services Impact on Time, Money and Efficiency, Pakistan, 2008



Source: Annex Table 2.17

The "very much" impact reported by respondents on saving in time (54 percent) saving in transportation cost (52 percent) and improvement in organizational efficiency (34 percent) seems quite commendable. One quarter of the respondents (25 per cent) also reported "very much" impact on income increase.

"Some what" effect of little less than half (47 percent) in income increase and more than one third (36-39 percent) impact on time savings, savings in transportation cost and improved organizational efficiency is also worth noting which respondents reported.

Savings in time and savings in transportation cost is reported "very much" in urban than rural area. The "very much" income increase (37 percent) is reported the highest in NWFP followed by Punjab (29 percent). The "very much" savings in time and savings in transportation cost is reported the most (64 percent) and (61 percent) in NWFP respectively followed by Punjab (63 percent) and (60 percent) respectively.

2.3.1 Degree of Dependence on Telecommunication Services

As regards degree of dependence of respondents on telecommunication for business and employment; 46 percent reported that they had "somewhat" dependence (upto 25 percent) while one-third (33 percent) reported "very much" dependence (upto 50 percent) and 8 percent reported total (100 percent) dependence on telecommunication for their work. The total dependence (100 percent) was reported the most (14 percent) in NWFP followed by Sindh (11 percent) "very much" dependence (upto 50 percent). It is reported the most (39

percent) in NWFP followed by Punjab (37 percent). Urban respondents showed more dependence than rural respondents on telecommunication. The details are given in Annex Table 2.18.

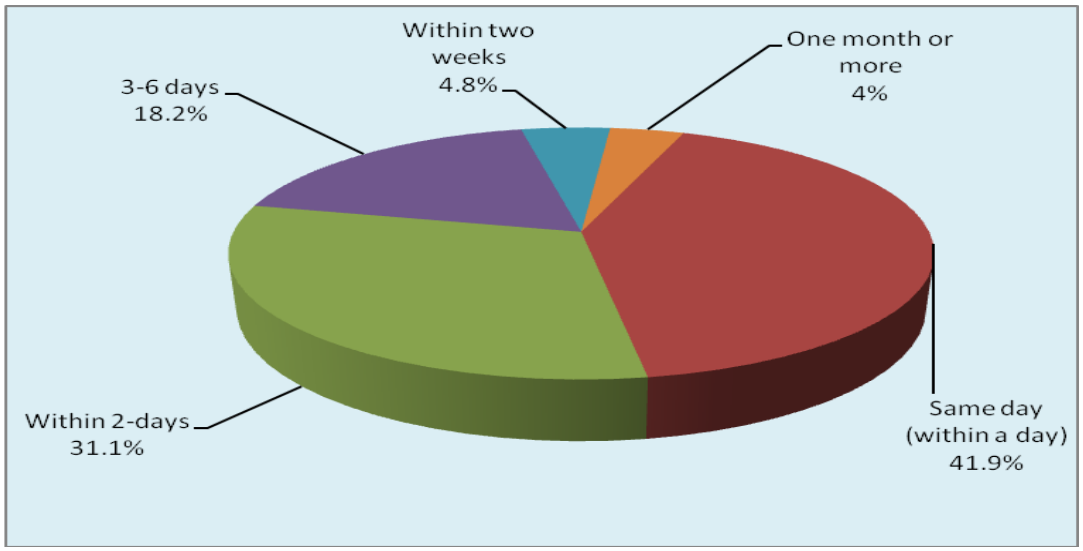
2.3.2 Fixed Land Line/ Wireless Local Loop

The survey had also collected information about FLL / WLL. Analysis of this information is provided below.

2.3.2.1 FLL/WLL Restoration of out of order phones

On an average a phone takes 2.5 days to be restored in the country. It takes 4 days in AJK/FANA, 3 days in Sindh and Balochistan each; the least time (2.1 days) is taken in Punjab. In rural and urban areas it takes 2.7 and 2.3 days respectively to restore a phone. The respondents reported that in case the FLL/WLL goes out of order, two-fifths (42 percent) reported that their phone is restored on the same day. The corresponding proportion is 49 percent in rural and 39 percent in urban area. In Sindh this proportion is the highest (53 percent) followed by Balochistan (46 percent). Slightly less than one-third (31 percent) respondents reported that their phones are restored within 2 days. The corresponding highest proportion (43 percent) is reported in NWFP followed by Punjab (33 percent). The longest time of repair of one month or more is also reported in Sindh (8 percent) followed by Balochistan (5 percent).

Figure-2.9
Restoration of out of order Phones, Pakistan, 2008



Source-Annex Table 2.19

2.3.2.2 Reasons for using WLL

More than half (54 percent) of the respondents gave various reasons for using WLL. The most important (16 percent) factor has been its portability and it was reported the highest (24 percent) in NWFP. In urban areas portability was reported more (18 percent) than rural area (13 percent). It was followed by other reasons such as better quality (10 percent), more economical (7 percent),

reliability, fixed network not available and ease and speed of service implementation (6 percent each). See Annex Table-2.20 for more details.

2.3.2.3 Type of WLL in Use

To a question as what type of WLL is preferred for use. Seven out of ten did not respond to this query, 17 percent reported handset type and 15 percent reported Desktop type (Annex Table 2.21). The highest portion (22 percent) of Desktop was reported in AJK/FANA followed by NWFP (20 percent) whereas Handset type was reported the most (19 percent) in Sindh followed by Punjab (16 percent).

2.3.2.4 Primary use of WLL

Majority of the respondents (70 percent) did not respond on the primary use of WLL. One quarter (24 percent) reported it for making phone calls. The corresponding proportion was 30 percent in NWFP and 29 percent in AJK/FANA. In Balochistan 91 percent did not report use of WLL and 9 percent reported its use for phone call only. Three percent respondents also used it for internet purpose and one percent used it for SMS (Annex Table 2.22).

2.3.3 Mobile Phones

The information collected about mobile phone is discussed as under:

2.3.3.1 Connection of Companies

On an average one respondent has mobile connection of 1.5 companies'. The breakdown of respondents using mobile of various companies is given as under:-

More than half (55 percent) of the mobile users have Mobilink connection. The highest numbers of Mobilink users are in Balochistan (59 percent) Sindh (58 percent) and Punjab (55 percent). The Ufone users largest number is reported in AJK/FANA (56 percent) and of Telenor are reported in Sindh (33 percent). The highest numbers of Warid users are in Punjab (21 percent). Pak China is concentrated in NWFP (10 percent). Mobilink, Ufone and Warid have more clientele in urban than rural area while Telenor has more users in rural area (33 percent) compared to urban areas (27 percent) (Annex Table 2.23).

2.3.3.2 Mobile Connections

On an average one respondent had reported 1.5 mobile connections. More than half (55 percent) had one connection, 29 percent had two connections and 11 percent had 3 connections. The number of respondents having two mobile sets was reported the highest (37 percent) in Balochistan followed by NWFP (34 percent). The number of three set holders was reported the highest (14 percent) in Sindh followed by NWFP (13 percent). One set holders are reported more in rural (59 percent) than urban area (53 percent) while two set holders were higher in urban (30 percent) than rural area (25 percent) as shown in Annex Table-2.24.

2.3.3.3 Mobile Handsets

One respondent on an average reported 1.3 hand sets: Seven out of 10 reported one handset whereas 26 percent reported 2 to 3 handsets. Two and more hand sets were reported highest in Balochistan (33 percent) followed by

Sindh (29 percent) and Punjab (26 percent). Urban respondents reported slightly 2 & more handsets than rural respondents. The corresponding proportion was 27 and 24 percent respectively (Annex Table-2.24).

2.3.3.4 Mobile Number Portability (MNP): Knowledge, Use and Problem

Almost 70 percent respondents were not aware of MNP. Thirty percent reported its awareness. In urban and rural areas the corresponding proportion is 31 percent and 25 percent respectively. This proportion of awareness was higher (46 percent) in AJK/FANA followed by Balochistan (37 percent). Only 9 percent availed MNP services; the highest been in Balochistan (27 percent) and in rural (11 percent) than urban area (9 percent). Almost all the respondents using MNP mentioned no problem with this service (Annex Table 2.25).

Box-2.1
Mobile Number Portability (MNP)

Pakistan is one of the few countries which have implemented Mobile Number Portability (MNP) at an early stage. This was an essential element of fair competition as it allows any subscriber to switch from one operator to another without going through the inconvenience of change in his/her phone number. The knowledge of MNP is reported by 31 percent of respondents in urban areas and 25 percent respondents with a rural background. According to data, nine percent of respondents have availed the service in urban areas while about eleven percent of rural respondents have taken advantage of this service. The respondents who availed this facility are more in rural than in urban area. It appears that the quality of service is not satisfactory in the rural areas which prompt users to change the service provider.

It may also be noted that majority of respondents are not familiar with the MNP. A media campaign is needed to promote the awareness about this service. In future, Number Portability is likely to be introduced between FLL and mobile phone numbers.

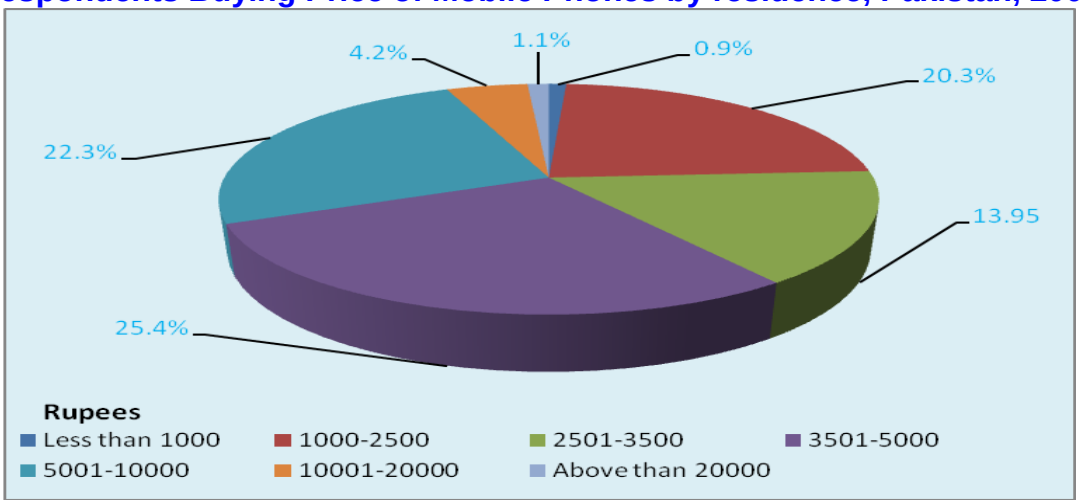
2.3.3.5 Place of Purchase of Handsets

Three-fifths of the respondents (60 percent) bought hand sets from any shop while more than one-third (37 percent) bought from authorized dealers and 3 percent respondents did not report its place of purchase (Annex Table- 2.26).

2.3.3.6 Buying Capacity of Handset

The average price for buying mobile set has been reported at Rs. 4755. In urban areas it was reported at Rs.5079 and in rural areas it was reported at Rs. 3939. The highest average buying price (Rs.5012) is reported in Punjab followed by NWFP (Rs.4773). The buying price reported is given in the following Figure-2.9:

Figure-2.10
Respondents Buying Price of Mobile Phones by residence, Pakistan, 2008



Source: Annex Table-2.26

2.3.3.7 Brand of Handsets

Annex Table 2.27 shows that almost two-thirds of the respondents (64 percent) were using Nokia brand of hand set. In NWFP four-fifths of the mobile users used Nokia brand followed by Sindh (69 percent). In Balochistan the Samsung brand (37 percent) was the most popular followed by Nokia (33 percent).

\2.3.3.8 Usage of Handsets other than Calls

On an average mobile phone was used for 3.3 different purposes in addition to making phone calls. Its highest (59 percent) use was for SMS which was more common in urban (63 percent) than in rural area (49 percent). The highest use for SMS was reported in AJK and FANA (71 percent) followed by NWFP (69 percent) and Sindh (66 percent). The detail breakdown is given in Annex Table-2.28.

Table-2.2
Respondents using Mobile Phone other than Calls, Pakistan, 2008

Mobile Phone used other than calls	Number	Percent
None	265	22.5
SMS	694	59.3
MMS	144	12.3
Calendar	524	44.7
Songs	379	32.4
Radio	378	32.3
Alarm	611	52.2
Camera	398	34.0
Internet/GPRS-EDGE	67	5.7
Games/Entertainment	231	19.7
Fax	20	1.7
Computer (PDA)	10	0.9
TV Viewing	13	1.1
Other Valued Added Services	19	1.6

Source: Annex Table 2.28

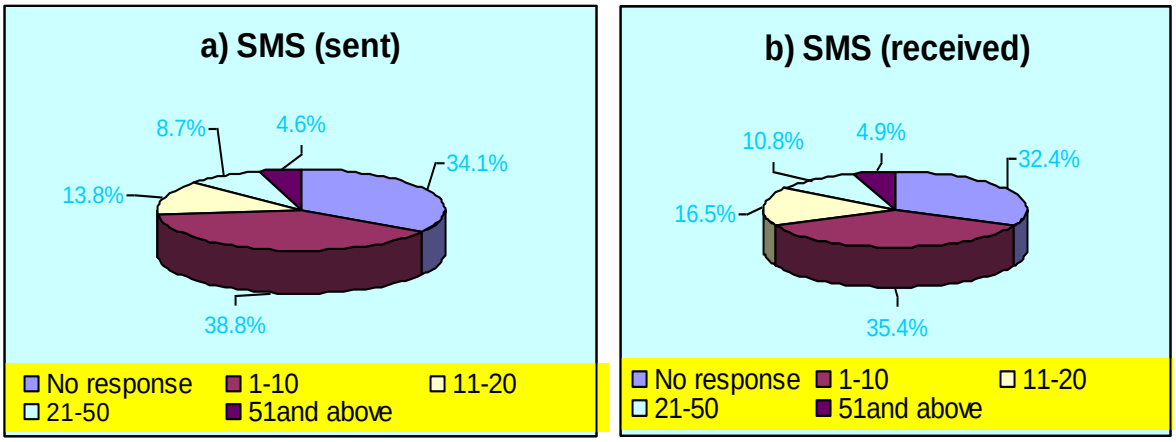
2.3.3.9 Short Message Service (SMS)

The survey also collected information on SMS which is discussed as under;

2.3.3.9.1 Messages Sent and Received

On an average 12 messages are sent and 14 messages are received daily by the respondents. The number of break down of messages is given as under.

Figure-2.11
Number of Messages Sent / Received per day by respondent, Pakistan, 2008



Source: Annex Table 2.29.

Source: Annex Table 2.2.9

Almost one-third of the respondents don't use SMS. This proportion is very high in rural than in urban area. The highest number of the messages (56 percent) ranging from 1-10 messages per day are sent in AJK and FANA followed by Balochistan (52 percent) and the least are sent in Punjab and NWFP (33 percent each). The highest number of 11-20 messages per day are sent in Sindh (15 percent) followed by Punjab and NWFP (14 percent).

Similarly the highest number of 1-10 messages per day are received in Balochistan (51 percent) followed by AJK and FANA. The highest number (11-20) messages per day are received in NWFP (20 percent) followed by Punjab (17 percent) and Sindh (16 percent).

2.3.3.9.2 Language Preferred for SMS

Annex Table 2.30 indicates that almost half of the respondents (49 percent) preferred to send / receive SMS in English followed by Roman Urdu (32 percent) and Urdu (23 percent). The English language preference was given more in urban (53 percent) than in rural (41 percent) area. The highest preference for English was given in Sindh (56 percent) followed by AJK and FANA (54 percent). The highest Urdu language preference is given in Balochistan (52 percent) and least in Punjab (11 percent). The highest Roman Urdu preference is given by Sindh (39 percent) followed by NWFP (37 percent) and the least in AJK and FANA (22 percent).

2.3.3.9.3 Purpose of SMS

The purpose of sending /receiving SMS was mostly related to personal matters (50 percent) followed by family related affairs (46 percent), social (42 percent), business (34 percent), education (14 percent), News (10 percent) and sports (8 percent).

The highest proportion of SMS for Business matter (51 percent) and personal (64 percent) purposes is given in Sindh. The highest use of SMS for family (66 percent) and social matters (61 percent) is reported in AJK/FANA. The highest use (31 percent) for education is reported in NWFP (Annex Table- 2.31).

2.3.3.10 Internet

The survey also collected information of internet use in the country. The detail is shown as under:

2.3.3.10.1 Type of Internet Connection

Two-fifths of the respondents (42 percent) using internet facility reported various types of internet connections. This varied from Dial-up (21 percent) to DSL/ADSL and Wireless/ Broad band (7 percent each) to cable broad band (5 percent) to 2 percent for mobile (GPRS/EDGE). These proportions were reported more in urban than rural area. The highest Dial-Up (42 percent) was reported in AJK and FANA followed by NWFP (40 percent). The highest (24 percent) DSL/ADSL use is also reported in AJK and FANA (Annex-Table 2.32).

3.10.2 Future Demand for Internet Connection

Those who reported no internet facility; 16 percent of them said that they would like to have it in the future. It was reported the most (32 percent) in Balochistan followed by AJK and FANA (20 percent), NWFP (17 percent) and 14 percent each in Punjab and Sindh (Annex-Table 2.32).

2.3.3.10.3 Reasons for not using Internet

Three-fifths respondents (59 percent) gave various reasons for not using internet. Majority of them (37 percent) said that it is not required. Its highest proportion (53 percent) is reported in Sindh. Eight percent each reported that they can not afford it or it is too complicated, while 5 percent said its services are not available which was reported the highest (17 percent) in AJK and FANA. Reasons of not using internet were reported more in rural than urban areas (Annex Table 2.33).

2.3.3.10.4 Place of Internet use

Almost less than two-third respondents (63 percent) mentioned various places of internet use. It was reported at 23 percent each in office and home. NWFP has reported the highest use at home (35 percent) and at office (34 percent). The use of internet at net café has been reported 11 percent and its highest (29 percent) use is reported in AJK and FANA and the least (5 percent) is reported in Balochistan (Annex-Table 2.34).

2.3.3.10.5 Persons using Internet

Around three-quarters of the respondents reported not using internet. Taking mean of all respondents (1171), the mean value of users is reported 0.7 persons at home and 1.5 persons at office when the mean is calculated for internet users then the mean value of users is reported 2.6 persons at home and 4.0 persons at the office.

Table-2.3
Number of Persons Using Internet, Pakistan, 2008

(Percent)

Persons using Internet	At home	At office
Not using	72.5	75.3
1	6.7	5.3
2-3	15.5	7.3
4-5	4.2	4.1
6 and more persons	1.0	8.0
Mean based on all respondents	0.7	1.5
Mean based on users only	2.6	4.0

Source: Annex Table-2.35

2.3.3.10.6 Various Purposes of Internet use

The respondents on an average reported 1.7 different uses of internet. The maximum use of internet was for e-mail (32 percent) followed by office work (21 percent), studies/ education and chatting (17 percent each). The detail is given in the Annex Table-2.36:

2.4 Impact of telecommunication services for various activities

To a question as to how the usage of telecommunication has resulted in the reduction of various activities such as letter writing, face to face meetings and travelling, the respondents replied that the FLL/WLL reduced “very much” their letter writing (36 percent) face to face meeting (22 percent) and travelling (26 percent). The effect of mobile phone in reducing the activities has been very significant. It reduced letter writing “very much” by 56 percent, face to face meeting 39 percent and travelling 44 percent. The use of internet “very much” changed letter writing (20 percent), face to face meeting (13 percent) and travelling (13 percent). The details are given in the following Table-2.4.

Table-2.4
Impact of FLL/WLL, Mobile Phone and Internet for letter writing, meetings and travels, Pakistan, 2008 (Percent)

Impact on	FLL/WLL	Mobile	Internet
Letters writing			
No response	31.6	6.0	56.0
No change	6.1	6.0	10.7
Some what	27.4	33.2	13.2
Very much	34.8	54.8	20.1
Face to Face Meeting			
No response	33.6	6.7	57.7
No change	5.8	5.8	14.2
Some what	38.5	48.4	14.9
Very much	22.0	39.1	13.2

Continued on next page-----

Travelling			
No response	34.6	6.7	58.8
No change	6.9	5.6	14.9
Some what	32.5	43.4	13.9
Very much	26.0	44.2	12.5

Source: Annex Tables-2.37 to 2.39

2.5 Telecommunication services effect / impact on various aspects of life

The respondents also reported the effect of various telecommunication Services/gadgets on different aspects of life which is given in the following table. The FLL/WLL users reported that social circle is broadened "some what" (40percent), improved family cohesion (38 percent), improved access to doctor/health (34 percent) and provided help in education (27 percent). However, FLL/WLL broadened social circle "very much" (19 percent) and helped education (12 percent) and family cohesion (25 percent).

Mobile user particularly reported "very much" effect compared to FLL/WLL users in the above mentioned aspects of life which is quite visible in the following Table-2.5.

Table-2.5
Effect of FLL/WLL, Mobile phone and Internet on Different Aspects of Life, Pakistan, 2008
(Percent)

Impact on different aspects of life	FLL/WLL				Mobile				Internet			
	No Response	No Change	Some-what	Very Much	No Response	No Change	Some-what	Very Much	No Response	No Change	Some-what	Very Much
Broaden social circle	31.1	9.6	40.3	19.0	6.3	6.2	47.7	39.8	55.1	19.1	14.9	10.9
Help in family cohesion	31.0	6.0	38.1	24.9	4.7	5.0	48.0	42.3	57.5	23.1	12.3	7.1
Improved access to doctor/ health	33.2	14.6	34.0	18.2	10.0	19.2	42.4	28.4	57.7	28.3	9.8	4.2
Help in knowledge/ education	37.0	24.2	26.6	12.3	15.5	28.6	36.2	19.7	55.3	12.0	12.5	20.3

Source: Annex Tables 2.40 to 2.42

The no response was reported the highest by internet users (55 percent) followed by FLL/ WLL (31 percent) and mobile users (6 percent).

The respondents were asked about the impact of various telecommunication services in terms of various benefits. On an average almost one-third of FLL/WLL (34 percent) users around one-tenth (10 percent) mobile users and more than half (55 percent) internet users did not respond to this question.

Those who replied and got no impact varied between 18 percent to 21 percent users in case of FLL/WLL from 7 percent to 31 percent for mobile users and 16 percent to 25 percent for internet users. Those who got "some what" impact of these benefits varied from one-third (33 percent) in case of FLL/WLL to more than two-fifth (43 percent) in case of mobile to 13 percent in case of internet.

The "very much" impact on the average for various benefits is reported 17 percent by FLL/WLL, 26 percent by mobile user and 10 percent by internet users. The details of impact of each benefit for these services are given in the following Table-2.6:

Table-2.6
Impact of FLL/WLL; Mobile phone and Internet on different benefits of life, Pakistan, 2008
(Percent)

Impact of Benefit	FLL/ WLL	Mobile	Internet
Helpful in solving day to day problem			
No response	30.7	3.5	54.6
No impact	8.4	6.9	21.5
Some what	38.4	48.2	14.4
Very much	22.5	41.3	9.5
Help in search of work/ livelihood			
No response	36.0	10.2	56.1
No impact	20.5	20.5	17.9
Some what	29.9	43.4	15.5
Very much	13.7	26.0	10.4
Increase in efficiency at work			
No response	34.3	8.0	55.5
No impact	12.8	15.0	18.5
Some what	34.4	45.4	14.4
Very much	18.4	31.3	11.5
Helpful in finding new customers			
No response	34.3	9.6	56.6
No impact	20.1	23.9	22.5
Some what	30.6	40.0	12.0
Very much	15.0	26.9	9.0
Increase in sales and turnover			
No response	34.3	9.1	57.6
No impact	17.7	21.8	23.0
Some what	32.4	43.4	10.8
Very much	16.6	25.8	8.7
Increase in income			
No response	33.9	7.7	56.4
No impact	19.4	24.3	23.8
Some what	33.8	45.7	12.2
Very much	13.5	22.4	7.6
Helpful in instant market/price information			
No response			

Impact of Benefit	FLL/ WLL	Mobile	Internet
No impact	34.9	9.1	56.4
Some what	16.7	22.2	17.9
Very much	29.9	41.8	13.5
	18.4	28.9	12.2
Providing information on new products			
No response	35.9	11.1	56.5
No impact	21.0	25.9	16.4
Some what	27.5	40.3	12.8
Very much	18.6	22.7	14.3
Better interaction with utility departments			
No response	37.7	16.0	58.8
No impact	16.4	30.6	25.0
Some what	30.5	39.3	10.2
Very much	15.5	14.2	6.0
Total Percent	100.0	100.0	100.0
Number	1171	1171	1171

Source: Annex Tables-2.43 to 2.45

Like telecommunication services impact on various aspects of life discussed above, its benefits are further explored in terms of ease in remittances, reduction in time related to business, transaction deals and crop and live stock management. The findings are giving in the Table 2.7. The high number of respondents gave 'no response' to crop and live stock management compared to ease in remittance and transaction deals. On the response related to "no impact" were reported high in case of FLL/WLL and internet. The highest number of respondents reported very much impact was reported by mobile phone users. The findings are given in the following Table-2.7:

Table-2.7
Impact of Telecommunication Services on remittance, transaction deals, crop and live stock management, Pakistan, 2008

(Percent)

Type of Impact	FLL/WLL				Mobile				Internet			
	No Response	No impact	Some-what	Very Much	No Response	No impact	Some-what	Very Much	No Response	No impact	Some-what	Very Much
Ease of Remittances	34.8	23.3	29.9	12.0	9.1	23.7	46.0	21.1	56.3	23.7	12.4	7.6
Reduction in transaction time in business deals	32.9	10.8	39.1	17.3	6.3	10.8	53.1	29.7	56.7	19.2	14.8	9.3
Helpful in crop management	57.6	17.4	17.9	7.0	40.1	22.8	24.9	12.3	71.4	19.0	6.8	2.8
Helpful in live stock management	59.0	19.0	16.7	5.4	43.5	24.9	20.3	11.3	72.2	18.0	7.0	2.7

Source: Annex Tables-2.46 to 2.48

To further support the above findings of telecommunication services impact / effect on various aspects of life; a statistical test (Chi Square test) has been used separately for FLL / WLL, Mobile and Internet to find out their association between various aspects of life. Table shows that FLL / WLL has significant association in all areas of life such as reduction a) in letter writing, b) face to face meetings and c) travelling, helpful in income, finding new customers etc. except increase in efficiency at work, instant price information, providing information on new products.

The mobile phone use association has been found significant in respect of all areas of life. The table 2.8 shows the use of internet significantly associated with reduced travel, increase in efficiency at work, increase in sales and turn over, providing information on new products and live stock management. The value of Chi Square tests and significance are shown in the Table-2.8.

Table-2.8

Significance of Association between use of FLL/WLL, Mobile phone and Internet on various areas of life, Pakistan, 2008

Variables	FLL			Mobile			Internet		
	Chi-Square Value	Signific-ance	Remarks	Chi-Square Value	Significance	Remarks	Chi-Square Value	Significance	Remarks
Reduction in letter writing	62.112	0	Significant	163.42	0	Significant	1.92	0.166	Not significant
Reduction in face to face meetings	68.375	0	Significant	147.23	0	Significant	0.533	0.465	Not significant
Reduce traveling	69.552	0	Significant	149.32	0	Significant	14.812	0	Significant
Helpful in solving day to day problems	6.621	0.01	Significant	17.943	0	Significant	0.108	0.742	Not significant
Helpful in search of work/livelihood	13.488	0	Significant	25.957	0	Significant	1.805	0.179	Not significant
Increase in efficiency at work	0.619	0.431	Not significant	25.727	0	Significant	11.935	0.001	Significant
Helpful in finding new customers	11.438	0.001	Significant	88.2	0	Significant	2.505	0.113	Not significant
Increase in sales and turnover	7.459	0.006	Significant	83.995	0	Significant	4.719	0.03	Significant
Increase in income	11.962	0.001	Significant	96.26	0	Significant	2.088	0.148	Not significant
Helpful in instant market/price information	1.167	0.28	Not significant	79.753	0	Significant	2.259	0.133	Not significant
Providing information on new	1.705	0.192	Not significant	82.979	0	Significant	9.295	0.002	Significant

products									
Ease of remittances	60.977	0	Significant	201.05	0	Significant	0.159	0.69	Not significant
Reduction in transaction time of deals	5.817	0.016	Significant	58.119	0	Significant	0.057	0.811	Not significant
Helpful in crop management	22.275	0	Significant	89.252	0	Significant	0	0.989	Not significant
Helpful in livestock management	14.723	0	Significant	90.228	0	Significant	3.914	0.048	Significant

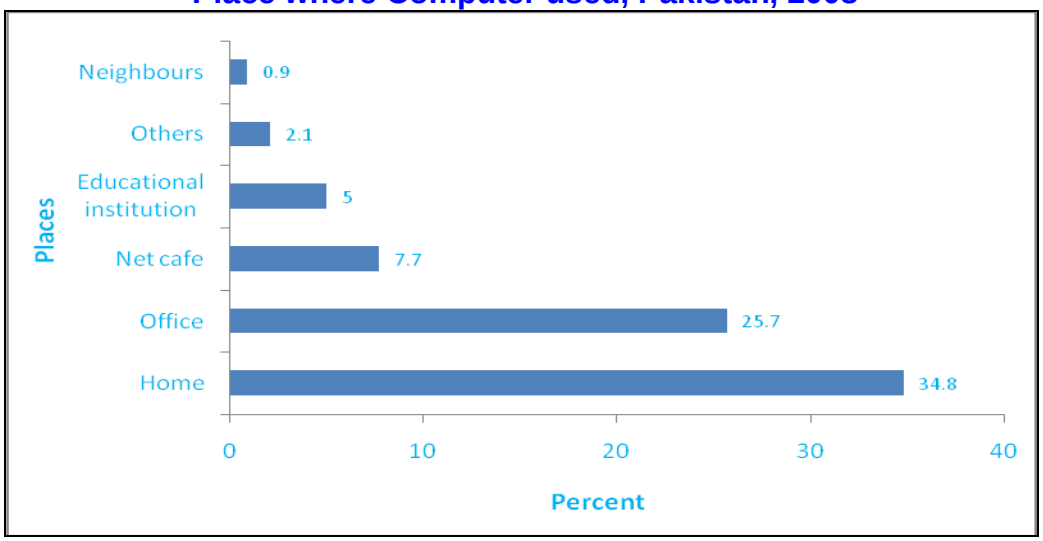
2.6 Computer

The survey also collected information about computer use in the country which is discussed as under:

2.6.1 Place of use

More than one-third respondents (35 percent) use computer at their home. About one-fourth respondents (26 percent) use it at the office. Around one twelfth (8 percent) respondents use it in Net Cafes. While only five percent of respondents use computers in educational institutions. The breakdown of computer use is given in the following Figure-2.12:

Figure-2.12
Place where Computer used, Pakistan, 2008



Source: Annex Table-2.49

2.6.2 Purpose of use

Slightly less than one-third (31 percent) of the respondents have indicated computer use for professional work. About one-fourth of respondents use it for internet and entertainment/sports which is shown in the following Table-2.9:

Table-2.9
Purpose of Computer used by Respondents, Pakistan, 2008

(Percent)

Purpose	Use
Professional work	31.0
Entertainment /sports	22.6
Internet	27.2
Others	2.9

Source: Annex Table-2.50

2.6.3 Reasons of use and Potential Demand

Nearly half of respondents indicated that they don't require the computer whereas only 9 percent respondents have informed that they cannot afford it. However, less than one-third (30 percent) of respondents would like to buy a computer in future as shown in the following Table-2.10:

Table-2.10
Reasons for not using computer, Pakistan, 2008

Reasons	Percent
Not required	48.0
Cannot afford	9.1
Others	2.4
Would like to buy in future	29.5

Source: Annex Table-2.51

2.6.4 Computer Price

The following table reflects purchasing power of the respondents for computer:

Table-2.11
Price at which Respondent would like to buy Computer, Pakistan, 2008

Price in Rupees	Percent
< 5000	6.1
5001- 10000	16.1
10001 – 25000	5.4
25000 +	1.7
Not responded	70.8
Mean price = Rs 3128	Rs.3128

Source: Annex Table-2.52

Around seventy percent respondents did not respond to this question. The mean price for buying a computer was reported at Rs.3128. The highest purchasing price (Rs.4045) is reported in Sindh and the lowest in Balochistan (Rs.2254). The one-sixth of respondents (16 percent) has indicated the price they would like to purchase a computer between Rs. 5001-10000.

2.7 Long Distance International (LDI)

The information on LDI is given as under:

2.7.1 Use of LDI

The following table provides various information about LDI calling cards:

Table-2.12
Long Distance International Calling Cards Practice by Respondents, Pakistan, 2008

LDI Calling Cards	Percent
Using LDI Calling cards	
No	82.5
Yes	17.5
Expenditure on LDI	
Calling Cards per month (Rupees)	
< 300	3.5
301-1000	9.6
1000+	4.4
Use of calling card for Nationwide Dialling	
No	88.9
Yes	11.1
Use of calling card for Overseas calls	
No	87.4
Yes	12.6

Source: Annex Table 2.53

About more than four-fifths (83 percent) of respondents don't use the LDIs calling cards for calling purposes. More than four-fifth (86 percent) respondents have indicated monthly LDI expenditure of below Rs 300. Only one out of ten respondents reported using LDI calling cards for nation wide and overseas calls.

2.7.2 Impact of LDI

To a question on impact assessment of competition in LDI and calling cards on various business matters, the Annex Table 2.54 shows that more than around three-quarters respondents replied no effect on various activities. Around 17 percent experienced "some what" impact while 5-11 percent had observed "very much" impact assessment. The highest "very much" impact has been on increase in family contact (11 percent) at national and international level followed by reduction in business travel (8 percent).

Table-2.13
Respondents reporting Impact Assessment of Competition in LDI Calling Cards (Business), Pakistan, 2008

Impact Assessment	Percent
Increased Business through overseas contact	
No effect	79.8
Some what	15.5
Very much	4.6
Increase Family contacts at national & international level	
No effect	72.0
Some what	16.7
Very much	11.4
Reduction in Business Travel	
No effect	74.9
Some what	16.8
Very much	8.3
Reduction in expenditure on Telecommunication	
No effect	7.3
Some what	17.3
Very much	5.5
Total Percent	100.0
Total Number	1171

Source: Annex Table 2.54

2.8 Value Added Services

The survey also collected information about value added services:

2.8.1 UAN, PRN & Toll Free Number (TFN) Access Services

Around half (51 percent) of the respondents had experienced no impact of Universal Access Number (UAN), Premium Rate Number (PRN) and Toll Free Number (TFN) access services. However, one-third respondents (32 percent) reported that TFN has made good/substantial impact. More than one quarter (27 percent) reported that UAN made good and substantial impact as shown in the following Table-2.14. However, more awareness is required for these services.

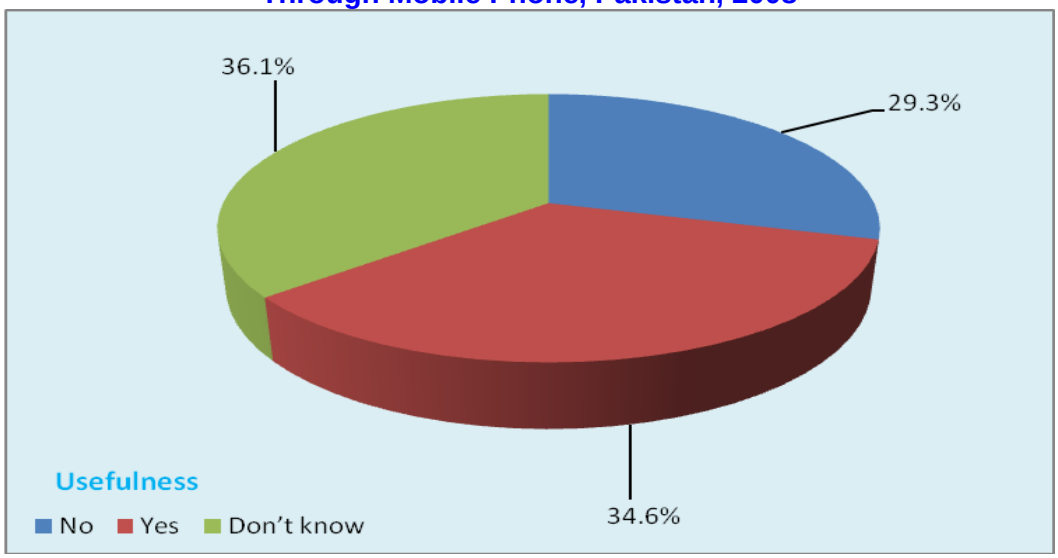
Table-2.14
Impact of Using UAN, PRN and TFN, Pakistan, 2008

Impact	Percent
Universal Access Number (UAN)	
No Impact	50.8
Nominal Impact	22.4
Good Impact	20.0
Substantial impact	6.8
Premium Rate Number (PRN)	
No Impact	54.2
Nominal Impact	28.8
Good Impact	14.8
Substantial impact	2.2
Toll Free Number (TFN)	
No Impact	48.2
Nominal Impact	19.5
Good Impact	22.9
Substantial impact	9.4

Source: Annex Table 2.55

About one third of respondents (35 percent) have reported that the access to UAN, PRN, and Toll Free Numbers through mobile will be useful as shown in the following Figure-2.13. These service numbers need more awareness among telecommunication service users.

Figure-2.13
Usefulness of Access to Service like UAN, PRN & TFN Through Mobile Phone, Pakistan, 2008



Source: Annex Table 2.56

Box-2.2
Impact of UAN, PRN and TFN services on business

Perception about usefulness of premier rate services like UAN, PRN and TFN was also sought in the survey of business enterprise. The perception of respondents on the impact of using these services on businesses was assessed. In case of TFN, 32 percent of respondents reported that it has "good to substantial" degree of impact in business. In case of UAN and PRN, of respondents reported the impact on business as nominal.

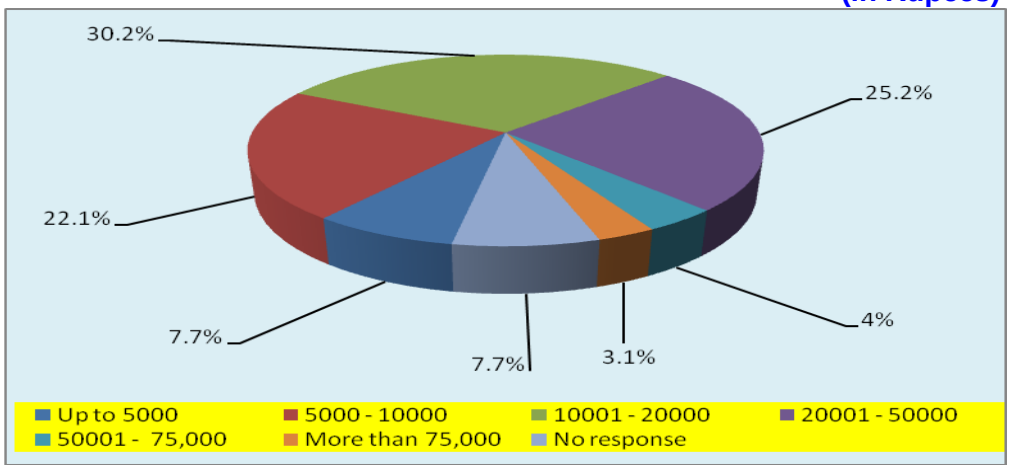
At the moment these services are operated on FLL phone lines only. The usefulness of provision of these services through mobile phone network was also assessed. Thirty five percent of respondents reported this to be a useful proposal while twenty nine percent had thought otherwise. Thirty-six percent of respondents did not respond.

The usefulness of provision of these services through mobile phone network was also enquired. Thirty five percent respondents reported this to be a useful proposal while twenty nine percent thought otherwise rest of respondents did not reply

2.9 Monthly income

The respondents were asked to give their monthly income. The average monthly income reported by respondents is Rs.21,200. The average monthly income is given in the following Figure-2.14:

Figure-2.14
Respondents Reporting Monthly Income, Pakistan, 2008
(in Rupees)



Source - Annex Table-2.57

One out of thirteen respondents did not report their income. Less than one-third (30 percent) of the respondents reported their monthly income up to Rs.10,000 and another 30 percent respondents belonged to income group between Rs.10,001-Rs.20,000. Balochistan has the highest income (Rs.23100). But after excluding extreme cases then the income of respondents reduces to Rs.19,000. Otherwise, Sindh ranks first (Rs.22,300) excluding Balochistan because of outliers then it is followed by Punjab Rs.20,700. There are about 30 respondents who have reported their income of Rs.100,000 and more. These extreme cases are reported more in AJK/FANA and NWFP. These skewed income

distribution to high percentile has resulted in higher average income which has been excluded as to portray realistic income of respondents.

A correlation matrix for observing the relationship between various variable is obtained through statistical package SPSS. Pair wise significant relationship has been found among respondents monthly income, number of mobile connections, number of mobile sets, number of SMS sent and total number of different facilities available to respondents. The correlation is found significant at one percent level. The coefficient of correlation values are given in Table-2.15

Table-2.15
Correlation Matrix with Significance values, Pakistan, 2008

Variable		Respondent's monthly income	Number of mobile connections	Number of mobile sets	Number of SMS messages sent	Total Number of facilities
Respondent's monthly income	Pearson Correlation	1	.132(**)	.173(**)	.087(**)	.111(**)
	Sig. (2-tailed)		0	0	0.003	0
	N	1171	1171	1171	1171	1171
Number of mobile connections	Pearson Correlation	.132(**)	1	.634(**)	.265(**)	.246(**)
	Sig. (2-tailed)	0		0	0	0
	N	1171	1171	1171	1171	1171
Number of mobile sets	Pearson Correlation	.173(**)	.634(**)	1	.108(**)	.236(**)
	Sig. (2-tailed)	0	0		0	0
	N	1171	1171	1171	1171	1171
Number of SMS messages sent	Pearson Correlation	.087(**)	.265(**)	.108(**)	1	.205(**)
	Sig. (2-tailed)	0.003	0	0		0
	N	1171	1171	1171	1171	1171
Total Number of facilities	Pearson Correlation	.111(**)	.246(**)	.236(**)	.205(**)	1
	Sig. (2-tailed)	0	0	0	0	
	N	1171	1171	1171	1171	1171

** Correlation is significant at the 0.01 level (2-tailed).

The statistical analysis is further substantiated by applying econometric model using logistic regression to find out the effect of various independent variables on dependent variables.

It has been observed that future demand for various telecommunication services (such as FLL, WLL, Mobile, Computer and internet) depend on the respondents monthly income. It is worth mentioning the five quintal of income were used to indicate the future demand for these gadgets. Table 2.16 shows that as income increases the potential demand for telecommunication services also

increase progressively according to odds ratios which are greater than one. For rural area almost same trend has been observed

The econometric model (logistic regression) further shows that as respondents monthly income increases their expenditures on various telecommunication services also increase.

Annex Table-2.16
Results of Econometric Model (Logistic Regression) of Telecommunication Services, Pakistan, 2008

Income		B	S.E.	Wald	Df	Sig.	Exp(B)	95.0% C.I.	
								Lower	Upper
FLL									
Step 1(a)	quint2			12.152	4	0.016			
	quint2(1)	0.281	0.362	0.602	1	0.438	1.324	0.652	2.69
	quint2(2)	0.652	0.379	2.954	1	0.086	1.919	0.913	4.033
	quint2(3)	0.394	0.393	1.004	1	0.316	1.483	0.686	3.202
	quint2(4)	1.037	0.344	9.091	1	0.003	2.821	1.437	5.535
	Constant	-2.792	0.286	95.458	1	0	0.061		
WLL									
Step 1(a)	quint2			8.697	4	0.069			
	quint2(1)	0.263	0.376	0.487	1	0.485	1.3	0.622	2.719
	quint2(2)	0.606	0.396	2.336	1	0.126	1.832	0.843	3.983
	quint2(3)	0.323	0.413	0.612	1	0.434	1.382	0.614	3.107
	quint2(4)	0.925	0.361	6.568	1	0.01	2.522	1.243	5.118
	Constant	-2.876	0.297	93.988	1	0	0.056		
MOBILE									
Step 1(a)	quint2			14.517	4	0.006			
	quint2(1)	0.503	0.203	6.109	1	0.013	1.653	1.11	2.463
	quint2(2)	0.507	0.229	4.885	1	0.027	1.659	1.059	2.6
	quint2(3)	-0.032	0.242	0.018	1	0.893	0.968	0.603	1.555
	quint2(4)	0.594	0.215	7.633	1	0.006	1.811	1.188	2.76
	Constant	-1.253	0.16	61.033	1	0	0.286		
COMPUTER									
Step 1(a)	quint2			5.773	4	0.217			
	quint2(1)	0.371	0.201	3.426	1	0.064	1.449	0.978	2.147
	quint2(2)	0.433	0.226	3.684	1	0.055	1.542	0.991	2.4
	quint2(3)	0.112	0.231	0.238	1	0.626	1.119	0.712	1.758
	quint2(4)	0.347	0.214	2.616	1	0.106	1.414	0.929	2.153
	Constant	-1.153	0.156	54.529	1	0	0.316		
INTERNET									
Step 1(a)	quint2			5.415	4	0.247			
	quint2(1)	0.522	0.262	3.969	1	0.046	1.686	1.008	2.818
	quint2(2)	0.361	0.301	1.441	1	0.23	1.434	0.796	2.586
	quint2(3)	0.388	0.295	1.722	1	0.189	1.474	0.826	2.63
	quint2(4)	0.592	0.275	4.635	1	0.031	1.808	1.055	3.1
	Constant	-2.079	0.212	96.091	1	0	0.125		

a Variable(s) entered on step 1: quint2.

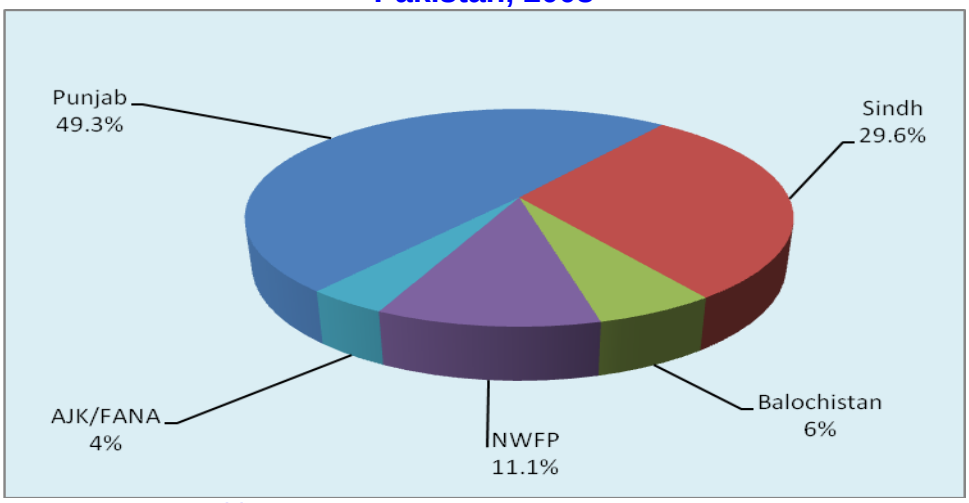
Chapter-3

Targeted Survey (Household)

The targeted survey also covered a household survey of 4000 respondents which was 80 percent of the targeted survey of 5000 respondents. Around 4500 questionnaires were distributed to enumerators with the aim of meeting the target of at least achieving the desired 4000 respondents. An analysis of 4113 completed questionnaires has been carried out, in which TEACH was successful to get information from households.

Thirty eight percent of the households were covered in the rural areas and 62 percent were covered in urban areas and towns. The details of Survey Methodology is given in Chapter-4. The break up of respondents by provinces/regions is given in the following Figure-3.1.

Figure-3.1
Percentage breakup of Household respondents by region, Pakistan, 2008



Source- Annex Table3.2

3.1 Findings of the survey

3.1.1 Background characteristics of respondents

3.1.1.1 Sex of Respondents

Eighty four percent of household respondents interviewed were males while the remaining 16 percent were females.

3.1.1.2 Age of Household Head

The mean age of household head is reported at 40 years and median age is reported at 35 years. Females mean and median ages are reported at 41 years and at 32 years respectively, while the males mean and median ages are reported

at 40 years and at 35 years respectively. The broad age groups of household heads are given in the following Table-3.1.

Table-3.1
Age Distribution of Household Head by Gender, Pakistan, 2008

(Percent)

Age Groups	Males	Females	Total
Under 20 years	3.3	4.9	3.5
20 – 39 years	56.4	62.6	57.4
40 – 59 years	31.2	18.9	29.2
60 years and above	2.4	0.9	2.2
Ages not reported	6.7	12.8	7.7
Total	100.0	100.0	100.0
Number	3456	657	4113
Mean age	39.8	40.5	39.9
Median age	35.0	32.0	35.0

3.1.1.3 Education of Household Head

One third of the household heads had graduation and higher qualification while less than one-third were matriculates and above.

Forty percent of the females were graduates and above, compared to males who comprised of 32 percent. There were more males who had no formal education (14 percent) than females (12 percent). The details of educational attainment by sex could be seen in the following table and by region is given in Annex Table-3.2:

Table-3.2
Educational qualification of Household Head Respondents by Gender, Pakistan, 2008

(Percent)

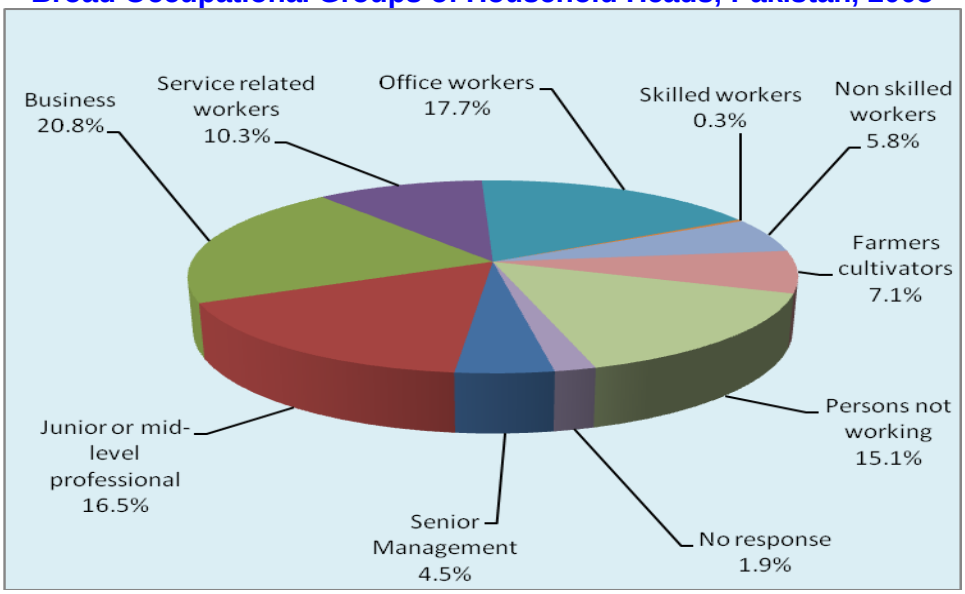
Educational Qualification	Male	Female	Total
No education	14.0	12.5	13.8
Under matric	23.0	16.4	22.0
Matric/intermediate	31.5	31.2	31.4
Graduate & above	31.5	39.9	32.8
Total	100.0	100.0	100.0
Numbers	3456	657	4113

3.1.1.4 Occupation of Household Head

Two-fifths (21 percent) of the household heads reported to be doing business (23 percent males and 8 percent females). One-sixth of the household heads were junior or mid level professionals (15 percent males and 26 percent females). Eighteen percent of the household heads were office workers and 15 percent were reported not working.

The proportion of females unemployed reported four times higher than males. The breakdown of broad occupations is given and details be seen and region is given in Annex Table 3.2 and 3.3

Figure-3.2
Broad Occupational Groups of Household Heads, Pakistan, 2008



Source: Annex Table 3.2 and 3.3

3.1.1.5 Family Size of Household

The mean family size was reported to be 7.6 persons per household. The highest family size was reported (9.6 person) in Balochistan, 7.8 persons in NWFP, 7.7 persons in Sindh and the lowest number of 7.2 family members is reported in Punjab. The household size progressively declined with educational attainment of household head from 8 persons with no education to 7.6 persons with matriculation/intermediate to 7.1 persons with graduate level and above education. The recently National Institute of Population Studies survey gives a household size of 7.2 persons (2008) Annex Tables 3.4 to 3.6

3.2 Findings of the household survey

3.2.1 Use of Phone and its future demand

On the whole all the respondents (96 percents) reported using at least one of the telephone facilities. Ninety two percent of the respondents reported to use mobile phone while 44 percent reported using Fixed Land Line phone (FLL). The use is reported more among females (52 percent) compared to males (43 percent). Only 10 percent were using Wireless Local Loop (WLL) phone, while 4 percent of the respondents have not used any phone (Annex Tables 3.7 and 3.8).

The respondents reported that if they had no phone and wanted to make a phone call to some one what would they do. Of these, four-fifths reported to have used several available facilities. More than half (53 percent) reported to use Public Call Office (PCO), 12 percent used relatives and friend's facilities. 8 percent used neighbours' facilities while nine percent used office facilities (Annex Tables 3.9 and 3.10).

3.2.2 Future demand for Phone

Half (50 percent) of the respondents reported intend to have at least one telecommunication services in future. Of these 39 percent preferred to have mobile, 14 percent preferred FLL and 7 percent desired to have WLL. Almost one in twelve respondents reported not to have a phone in future. The future demand by region and sex is given in Annex Tables 3.11 and 3.12.

3.2.3 Reasons for not having Telecommunication Services

3.2.3.1 FLL/WLL

Almost half of the respondents (48 percent) gave various reasons for not having FLL/WLL. More than one quarter (28 percent) reported that it is of no use to them. Fifteen percent reported that they cannot afford it. The no responses were reported more among females (61 percent) than males (51 percent). Another 5 percent reported such facility is not available, while 2 percent reported they find its use complicated (Annex Table 3.13 and 3.14).

3.2.3.2 Mobile

Only 10 percent respondents gave various reasons for not having mobile phone, such as 5.5 percent reported that they cannot afford (6 percent males versus 3 percent females) and 4 percent reported that they have no use of it (Annex Table 3.15 and 3.16).

3.2.3.3 Internet

Almost three quarters (72 percent) of the respondents gave reason for not having internet. Two-fifths (39 percent) reported that they have no use of it (41 percent males compared to 30 percent females). Fourteen percent cannot afford it while 12 percent find it complicated (Annex Table 3.17 and 3.18).

3.2.4 Purpose for using Telecommunication Services

The respondents were asked to indicate various purposes for using telecommunication facilities. The purpose of use is given in the following Table-3.3:

Table-3.3
Purpose for using FLL/WLL, Mobile, Internet and PCO/Payphone, Pakistan, 2008
(Percent)

Use of FLL/WLL Mobile & Internet	FLL/WLL	Mobile Phone	Internet	PCO/Pay Phone
Business	25.9	54.8	5.7	6.8
Family matter	45.7	83.2	6.0	10.0
Social contact/work	37.9	75.8	8.4	7.7
News/sports	9.2	26.3	15.9	1.8
Education	18.7	35.4	17.6	2.6
Health/Medical	26.3	46.8	5.6	3.3
Shopping	19.3	41.5	4.7	3.4
Office work	23.1	37.6	7.8	2.7
Farm management	10.0	20.8	1.8	3.5
Live stock management	8.4	16.9	1.2	3.6

Source: Annex Tables 3.19 to 3.26

3.2.4.1 FLL/WLL

On an average respondents gave 2.2 various reasons for using FLL/WLL. Of these, the majority of the respondents (46 percent) use it for family matters, (38 percent) for social contacts. One-fourth of them used for health/medical and business purpose each. Females use more than males for family matters, social contact, education and health purposes. (Annex Tables 3.19 and 3.20).

3.2.4.2 Mobile

On an average the mobile users utilize their phones for 4.4 different purposes. The highest percentage use for family matters (83 percent) and social contacts (76 percent). More than half (55 percent) use for business purposes and about another half (47 percent) use for health/medical purposes. More than one-third use for education purposes and one-fifth use it for farm / live stock management. Males use more than females for almost all purposes. (Annex Tables 3.21 and 3.22).

3.2.4.3 Internet

The internet has been reported for less than one purpose. The highest (18 percent) proportion reported its use for education (17 percent males and 23 percent females) and 16 percent for news/sports (15 percent males and 19 percent females) and 8 percent reported its use for social contacts and office work each. (Annex Tables 3.23 and 3.24)

3.2.4.4 PCO/Payphone

The PCO/Pay phone was mostly used for family matters (10 percent) followed by social contact / work (8 percent) and business (7 percent). Its overall use for various purposes was reported more by males than females (Annex Tables 3.25 and 3.26).

3.2.5 Restoration of out of order Telephone line

The respondents reported that it takes on the average 5 days to get the phone restored. The highest time taken is reported in AJK (7.1 days) followed by Sindh and NWFP (6.1 days each), and least time is taken in Punjab (4.2 days).

As expected telephone restoration takes one day more in rural than in urban areas. Slightly less than one quarter (23 percent) reported that their phone is restored within a day and more than one-third (36 percent) reported its restoration within 2 days; 23 percent reported its restoration in 3 to 6 days whereas 10 percent reported it takes one month or more to get their phones restored. Female's respondents reported that their phone restoration takes more time (within two weeks) than males (13 percent females versus 8 percent males). The highest time of restoration of one month or more is reported in Sindh (16 percent). The same duration of restoration is reported 13 percent in rural and 8 percent in urban areas (Annex Tables 3.27 and 3.28).

3.2.6 Place of purchase and price of mobile handset

Around sixty percent respondents reported to purchase mobile handsets from any shop. More than one-third (36 percent) preferred to buy from authorized dealers. More females reported to buy phone from authorized dealers than males (48 percent females versus 34 percent males) and about 5 percent gave no choice about their place of purchase (Annex Tables 3.29 and 3.30).

Females on the average desired to buy more expensive phones than males. The average purchase price was reported Rs.5883 by females compared to Rs.4755 by males. The average purchase price was reported more (Rs.5411) in urban than rural area (Rs.4174). On an average respondents reported to spend Rs 4935/- for buying a mobile set. About one quarter (26 percent) of respondents wanted to buy it within range of Rs 1000 to Rs. 2500. Another less than one quarter (23 percent) wanted to buy it between Rs. 3501 and Rs 5000. One-fifth of the respondents wanted to purchase between the range of Rs 5001 to 10000. Six percent were willing to buy for more than Rs 10000 (Annex Tables 3.31 and 3.32).

Box-3.1
Price of Mobile Handset

The popular purchase price indicated by of respondents for mobile handset lies in the range of Rs 1000 to Rs 2500 per set. As many as twenty-six percent of respondents indicated to be falling in this range. The next price range is Rs 3501 to Rs 5000, which accounted for twenty three percent of respondents. Handsets in the price range Rs 2501 to 3500 and Rs 5000/- to Rs 10,000 are used by twenty percent and nineteen percent of respondents respectively. Only one percent of respondents expressed a willingness to spend more than Rs 20,000 on purchase of a handset. One and half percent of respondents indicated that they would like to buy a handset for about Rs 1000. On the high end only one percent of respondent showed intent to buy a handset costlier than Rs 20,000. Eighty percent of respondent had liked to spend between Rs 1000 and Rs 10,000 for a handset. Only four percent of respondents had expressed intent to purchase handset costing between Rs 10,000 and 20,000. The average cost of a handset works out to be Rs 4935. There is an extremely small market for the high end mobile handsets like blue berry and i-pods. The manufacturer may need to introduce low cost options in the market.

3.2.7 Brand of Mobile Handset

Almost three-fifths (59 percent) of respondents have Nokia brand of mobile phones. Its use was more among males than females and also more in urban than rural area and also the highest in AJK/FANA. It was followed by Samsung (14 percent), Sony Erickson (13 percent), LG (10 percent) and Chinese origin (4 percent) (Annex Tables 3.33 and 3.34).

3.2.8 Family members with Mobile Handset

The respondents reported that on an average two male family members and one female family member had additional mobile phone. About 35 percent of males in the family had one phone and 45 percent males has 2-3 phones and 8 percent males has 4-5 phones and the rest 2.5 percent males had 6 or more phone in the family. About forty five females in the family had reported no mobile phone and 36 percent females in the family had one phone. Another 17 percent reported that female family members had 2-3 mobile phones (Annex Tables 3.35 and 3.36).

3.2.9 Monthly expenditure on Telecommunication Services

The monthly expenditure on various telecommunication services is given in the following table.

Table-3.4
Monthly Expenditure on Telecommunication Services by Household, Pakistan, 2008
(Percent)

Expenditure (Rupees)	FLL/WLL	Mobile Phone	Internet	Calling Cards
Upto 250	20.4	18.4	53.7	56.6
251 – 500	33.0	35.5	26.2	28.8
501 – 1000	28.0	24.8	15.7	8.2
1000 +	18.6	21.2	4.4	6.4

Source: Annex Table 3.37

One-fifths of the respondents using FLL pay a monthly bill of less than Rs.250 and one third pay between Rs.251 and Rs.500. Females pay more than males in the category of monthly expenditures of Rs.501 and more. The highest proportion (36 percent) of monthly bill is paid by mobile users who spend between Rs.251 to Rs.500 and another one quarter respondents pay monthly bill between Rs. 501 to Rs 1000 while one-fifth of the mobile users pay more than Rs 1000 per month. More than half of internet users (54 percent) pay bill upto Rs 250 per month while one quarter pays Rs 251 to Rs 500. Majority of the calling card users (57 percent) spent up to Rs 250 per month on phone calls while (29 percent) spent Rs. 251 to Rs 500. Six percent spend more than Rs 1000. Females in mobile users, internet and calling card users in the category of up to Rs.250 monthly expenditure pay more than males. Rural FLL users pay more monthly expenditure up to Rs.1000 than urban users. They pay more than urban users up to Rs.500 in case of mobile use. They also spend more up to Rs.250 in case of internet than urban users which is 63 percent in rural and 50 percent in urban area (Annex Tables 3.37 and 3.38).

3.2.10 Use of Phone other than calls

3.2.10.1 FLL

Around 46 percent respondents gave various use of phone other than calls. On an average a respondent used it for 1.5 different purposes. The majority (29 percent) use it for alarm (37 percent females compared to 27 percent males) and 21 percent also use it for time purposes. The breakdown is given as under:

Table-3.5
Use of FLL other than calls by Household, Pakistan, 2008

Use of FLL	Percent	Number
Time	20.8	856
Fax	3.5	146
Alarm	28.5	1172
Internet	14.2	582
Voice Mail	3.0	125

Source: Annex Table 3.39 and 3.40

3.2.10.2 WLL

One-third of WLL respondents (42 percent females and 31 percent males) reported that they do not use their phone for other purposes than making a call. 12 percent use it for SMS/MMS. Its use was more among females than males which is 15 percent and 11 percent respectively. The detail is given in the Annex Table 3.41 and 3.42.

3.2.10.3 Mobile

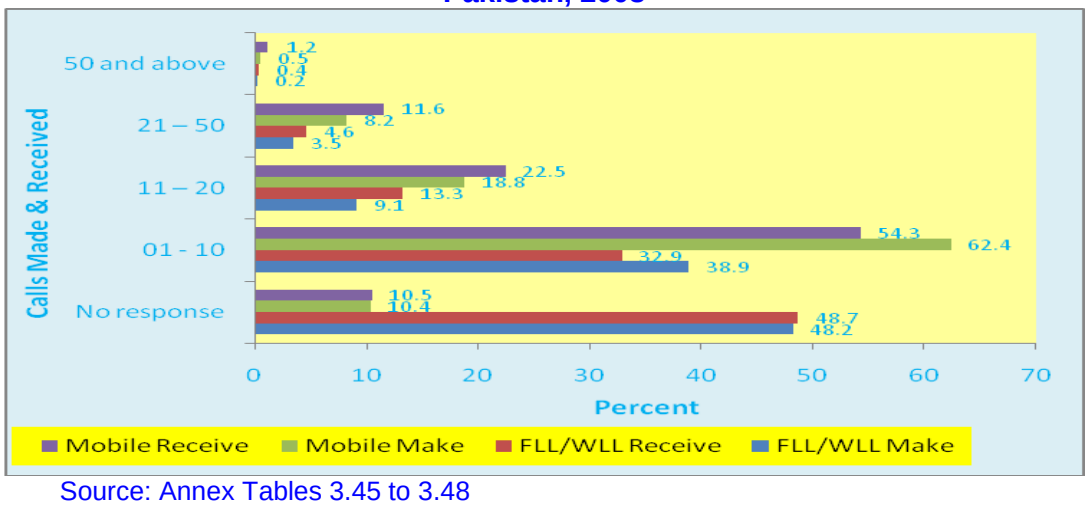
Three quarters of the mobile set users reported that they use their mobile sets for SMS and MMS. Its use was reported more among females than males. About one-third use it for calendar, songs, radio and camera. More than one half (52 percent) use it for alarm. More than one quarter also use it for games and sports. The details could be seen in Annex Tables 3.43 and 3.44.

3.2.11 Number of Calls made/received

On an average one FLL/WLL phone user makes 5.2 calls and receives 6 calls per day. Males and females make 5 and 6 calls respectively and they received 6 and 7 calls respectively. The highest number of calls are made (9.2 calls) and received are in NWFP (9.1 calls). Urban respondents make/receive more calls than rural respondents (Annex Tables 3.45 and 3.46).

Similarly the mobile phone users on an average make 10 calls and receive 12 calls per day. Males make and receive 10 and 11.5 calls respectively Females make and receive 8 and 9 calls respectively. The highest number of calls made/received are in NWFP (12 calls) and AJK (11 calls). They also received highest number of calls 14 and 13 respectively which are 10 and 12. Urban mobile users on an average make/receive 2 calls more than rural mobile users (Annex Table 3.47 and 3.48).

Figure-3.3
Number of Calls Made/Received by Household on FLL/WLL and Mobile phone, Pakistan, 2008



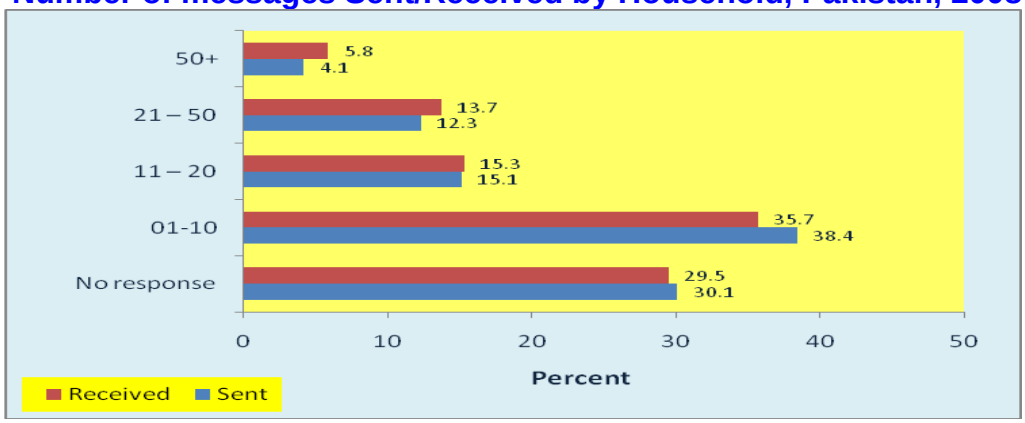
Source: Annex Tables 3.45 to 3.48

3.2.12 SMS

3.2.12.1 Number of SMS Sent/Received

On an average telecommunication user send 14 SMS and receive 16 SMS daily. Females send 19 SMS and received 22 SMS per day compared to males who send and receive 13 and 15 SMS respectively per day. The highest SMS use is in AJK followed by NWFP (Annex Tables 3.49 and 3.50)

Figure-3.4
Number of messages Sent/Received by Household, Pakistan, 2008



Source: Annex Table 3.49 & 3.50

3.2.12.2 Language desired in SMS

More than one-quarter of the telecommunication users send/receive SMS in Urdu and English language [English language is used more by females (37 percent) than males (26 percent)]. Roman Urdu is also used more by females than males. One fifths of the respondents use roman Urdu and one quarter respondents don't use this facility (Annex Tables 3.51 and 3.52).

3.2.12.3 Purpose of SMS

Slightly less than one-third (31 percent) did not give any purpose of sending/receiving SMS. Those who responded, they on an average gave 2.6 different purposes of sending/receiving SMS. More than half of respondents (54 percent) use it for personal purposes, another 41 percent use it for family purposes and 22 percent use it for educational purposes. 18 percent use it for business purposes around 10 percent use it for social / news / sports purposes. Females use it more for personal and education purposes than males (Annex Tables 3.53 and 3.54).

3.2.13 Computer

Almost two-fifths (38 percent) of the respondents reported to have personal computer (PC), (males possessed 64 percent and females 49 percent). Three-fourths (74 percent) respondent do not want to buy computer in the future whereas 26 percent respondents reported their desire to have it in future, the females' desire for having a PC was higher (29 percent) than males (26 percent). The respondent on an average reported to buy PC for Rs.7833. The buying capacity

was reported more in urban (Rs.8590) than rural area (Rs.6465). Females desired to pay more (Rs.8819) than males (Rs.7619) (Annex Table 3.55 and 3.56).

Box-3.2
Affordability of Personal Computer

According to National Institute of Population Studies (NIPS) Survey (2006-07), 8 percent of Households are using computers. In the TEACH Survey (2008) thirty-eight percent of household respondents indicated ownership of personal computer (PC). When asked about the future ownership only twenty six percent had indicated that they would like to own a PC. Affordability of PCs appears to be a serious issue. When asked how much they would like to spend on a PC, the desired expenditure had varied by income. The average price of a PC which comes out to be Rs 10,447/-. Currently, a new PC in the market costs about Rs 50,000/-. Non-branded PCs costs less. Only a second hand PC can be purchased at a price of Rs 10,000/-. The high price of PC is a barrier in the way of spreading the use of PC. To take advantage of PC technology on a larger scale, a strategy needs to be evolved to lower the cost of PCs. A subsidy may be given under a USF project that should help the spread of broadband internet in unattractive remote areas.

3.2.14 Internet

Two-fifths (40 percent) respondents using internet gave various places of its use. On an average one user gave 1.4 different places of use. Of these one quarter (26 percent) used it at home. One-tenth (10 percent) availed the Net Café facility; 8 percent used at offices and 7 percent used at educational institutions. Females reported to use it more than males at home (35 percent females versus 24 percent males) and at offices (11 percent females versus 7 percent males (Annex Table 3.57 and 3.58). Almost one-fourth of the respondents (25 percent) wanted to have computer at home of these 29 percent were females and 24 percent were males (Annex Table 3.59 and 3.60).

Three out of ten (30 percent) respondents reported about type of internet connection they were using. Majority of them (17 percent) reported using dial-up. Twenty two percent females and 17 percent males used Dial-up followed by cable broadband and Wireless/Broadband is used by 5 percent each(Annex Table 3.61 and 3.62).

The respondents reported to use internet on an average for 1.4 purposes. Majority (29 percent) reported its use for e-mail. (33 percent females and 28 percent males). More than one-fifth (22 percent i.e. 9 percent females and 21 percent males) used it for education purpose; 17 percent use it for news/sports/entertainment. Urban respondent make use of it more of e-mail, new/sports/entertainment and education than rural respondents (Annex Table 3.63 and 3.64).

Box-3.3
Internet Use

Twenty-six percent of respondents have indicated the use of internet at home. Another twenty-five percent of respondents would like to have internet at home in future. Those already using internet at home belong to high income strata (thirty-four percent in Rs 10,000 to 50,000 income slab and fifty-six percent in Rs 50001 and higher income slab). The internet ownership at the moment is, therefore, a facility being enjoyed by higher income groups. Those who are keen to have this facility at home in future, fall in middle and higher income brackets. Sixty-three percent of them belong to income groups having income of more than Rs 10,000 per month. There is some demand in the lower income groups as well. Thirty three percent of the household of respondents with an income of upto Rs 10,000/- p.m. have expressed a wish to own internet in future. The recent launch of a scheme by PTCL to allow internet connectivity to all subscribers of FLL is a positive step in popularizing this service. As computer is a necessary gadget for the internet connection, use of computer in Net café' and telecentres holds a bright prospect for an expansion of business.

Twelve percent respondent take its help for employment and 11 percent use it for chatting and office work each. For voice communication, business/trade and games its use is reported by 6 percent of the respondents each.

Eighteen percent each of females and children have reported using internet at home. The females respondents said that one-third females and around one-quarter children in their family used internet where as males reported that 14 percent females and 17 percent children used internet in their home. As expected in urban area's females and children use it more (Annex Table 3.65 and 3.66).

3.3 Socio-economic impact of telecommunication services and various benefits

The respondents gave various responses through which the telecommunication services (FLL/WLL, Mobile and Internet) helped / improved their socio, cultural, family economic status, savings, education, health, employment and other matters. The findings about each of the telecommunication services (FLL, WLL, mobile phone and internet) is given in the following table:

Table-3.6
Households Impact of FLL/WLL; Mobile and Internet on various benefits, Pakistan, 2008
(Percent)

Impact of Benefit	FLL/WLL	Mobile	Internet
Broadening of Social Circle			
No response	39.2	9.6	55.5
No impact	10.5	8.4	18.9
Some what	34.7	52.2	16.8
Very much	15.6	29.8	8.8
Better family cohesion			
No response	38.7	7.5	58.6
No impact	6.7	5.8	21.2
Some what	32.0	51.2	14.5
Very much	22.5	35.5	5.6

Impact of Benefit	FLL/WLL	Mobile	Internet
Improved access to health / medical facility			
No response	42.9	15.8	58.9
No impact	13.4	16.4	22.7
Some what	28.1	44.4	11.3
Very much	15.6	23.1	7.2
Helpful in education			
No response	44.3	20.3	55.6
No impact	17.8	20.9	11.0
Some what	24.8	39.1	11.3
Very much	13.0	19.7	22.1
Helpful in solving day to day problems			
No response	42.5	14.0	58.9
No impact	11.4	10.5	20.8
Some what	28.2	41.7	12.0
Very much	18.0	33.9	8.3
Improved interactions with civic authorities			
No response	44.3	22.6	59.7
No impact	17.9	33.0	29.3
Some what	25.8	30.8	8.3
Very much	12.0	13.6	2.7
Quick help in emergencies			
No response	43.1	12.1	59.7
No impact	11.3	7.9	27.3
Some what	24.3	34.8	8.8
Very much	21.3	45.2	4.2
Increased awareness of employment / work			
No response	44.5	16.2	57.7
No impact	16.3	13.9	17.6
Some what	24.9	39.3	10.8
Very much	14.2	30.7	14.0
Reduced need for travel			
No response	43.8	12.7	59.7
No impact	12.5	9.0	20.4
Some what	27.1	38.8	10.0
Very much	16.6	39.5	9.9
Increased savings			
No response	37.3	6.9	53.7
No impact	34.1	43.3	27.3
Some what	23.3	40.9	11.5
Very much	5.3	8.9	7.5
Increased income			
No response	39.3	10.1	55.9
No impact	36.1	44.5	29.8
Some what	18.7	35.1	9.2
Very much	6.0	10.3	5.1

Source: Annex Tables 3.67 to 3.69

Around more than one-third to more two-fifths (37 percent - 45 percent) of the FLL/WLL users did not give answers to different impact of telecommunication growth. The non-response was minimum for mobile users and it was the highest (55 to 60 percent) for internet users. “No impact” on improvement about various matters is reported lowest compared to “some what” and “very much” impact. The highest proportion of respondents reported “somewhat” improvement / elevation in their life through use of telecommunication service. The highest impact / improvement is reported by mobile users. Almost half (50 percent) of the mobile users, 29 percent of FLL/WLL users and 19 percent internet users reported increase in their savings where as 45 percent mobile users, 25 percent FLL/WLL users and 14 percent internet users reported increase in their income.

3.3.1 Chi-square test applied to various benefits

Chi-square test was applied to the data to observe association between use of telecommunication services and various aspect of life.

The use of FLL / WLL, association was found significant with increased income; increased savings; usefulness for education; quick help in emergency and increased awareness of employment / work. In case of mobile use association was observed significant with increased income, increased savings, improve interaction with civic authorities, easier access to health / medicare and useful for education. It may be noted that association with increased income and increased saving is very significant.

With regard to impact of internet service as being beneficial relationship is significant with the benefits listed above, expect for improved family relationship and easier access to health / medicare facility where association is found insignificant.

Table-3.7

Significance of Association between use of FLL/WLL, Mobile phone and Internet on various areas of life, Pakistan, 2008

Variables	FLL			Mobile			Internet		
	Chi-Square Value	Signi-fi cance	Remarks	Chi-Square Value	Signifi-cance	Remarks	Chi-Square Value	Signifi cance	Remarks
Broadening of social relationship	0.428	0.513	Not Significant	5.769	0.016	Not Significant	22.965	0	Significant
Improved family relationship	3.809	0.051	Not Significant	0.139	0.709	Not Significant	2.548	0.11	Not Significant
Easier access to health/medical facility	0.203	0.653	Not Significant	32.285	0	Significant	2.548	0.11	Not Significant
Useful for education	24.081	0	Significant	11.686	0.001	Significant	194.936	0	Significant
Helpful in solving day to day problems	0.063	0.801	Not Significant	0.021	0.885	Not Significant	52.798	0	Significant

Improved interactions with civic authorities	3.217	0.073	Not Significant	212.553	0	Significant	190.676	0	Significant
Quick help in emergencies	11.465	0.001	Significant	6.05	0.014	Not Significant	11.465	0.001	Significant
Increased awareness of employment/work	9.039	0.003	Significant	10.307	0.001	Significant	41.263	0	Significant
Increased savings	152.137	0.003	Significant	1077.332	0	Significant	34.049	0	Significant
Increased income	315.651	0	Significant	1442.146	0	Significant	97.787	0	Significant

3.4 Monthly family income

The mean monthly family income is reported as Rs.19,417 per month. Urban respondents reported 32 percent more income than rural respondent (Rs.21,402 versus 16,266) whereas male respondent reported 20 percent more monthly family income than female respondents (Rs.22,534 versus Rs.18,842). Six percent respondents reported their monthly family income of less than Rs.5,000. Around one-third (31 percent) respondents reported monthly income between Rs. 5001 to Rs.10000, another one-third respondents (32 percent) reported their monthly family income between Rs.10001 to Rs.20000. About one-fourth of respondents (24 percent) reported their income between Rs.20001 to Rs.50000 and 4 percent had their family income in the range of Rs.50001 to 100,000. The analysis has excluded some out liars in reporting family income (Annex Table 3.70 and 3.71).

Box-3.4
Use of Telecommunication Facility by low income groups (Household)

The data collected in household survey were also analyzed in respect of low household income having monthly income of less than Rs. 5000/- per month.

Among the low income households, 44 percent had reported the use of FLL phone as against average of 73 percent of respondents from the entire survey. In this income group, 73 percent had reported use of mobile phone as against overall average of 92 percent. Extent use of any service, response was 77 percent as against average of 96 percent. It shows that people with low incomes use telecommunication facility to a lesser degree.

However data about of respondents planning to have mobile phone in future show that the percentage of response in this group is nearly equal to the average value of response in the Survey. The mean number of calls made and received by this group with FLL phone and Mobile phone is less than half of the mean value of overall survey. Same is the case with number of SMS messages. Data also show that a lower percentage of females and children in low income group use internet at home as compared to the respondents from higher income group. The degree of use of telecommunication is positively related with income

A correlation matrix for observing the relationship between various reliable is also obtained using statistical packages SPSS. Pair wise significant relationship has been found among family's monthly income, family size, number of mobile sets owned by sex, total number of mobile sets, calls made on FLL / WLL and on

mobile and number of SMS sent daily. Table 3.8 shows the coefficient correlation values which are significant at one percent level.

Table-3.8
Correlation Matrix of Various Variables

Variable		Family's monthly income	Family size	Number of mobile sets male owned	Number of mobile sets female owned	Total Number of mobile sets	Make calls on FLL/WLL	Make calls on Mobile	Number of SMS messages sent
Family's monthly income	Pearson Correlation	1	0.009	.138(**)	.153(**)	.180(**)	.246(**)	.166(**)	.200(**)
	Sig. (2-tailed)		0.554	0	0	0	0	0	0
	N	3991	3963	3991	3991	3991	3991	3991	3991
Family size	Pearson Correlation	0.009	1	.312(**)	.062(**)	.253(**)	0.025	.073(**)	0.014
	Sig. (2-tailed)	0.554		0	0	0	0.113	0	0.361
	N	3963	4078	4078	4078	4078	4078	4078	4078
Number of mobile sets male owned	Pearson Correlation	.138(**)	.312(**)	1	.281(**)	.857(**)	.192(**)	.251(**)	.204(**)
	Sig. (2-tailed)	0	0		0	0	0	0	0
	N	3991	4078	4113	4113	4113	4113	4113	4113
Number of mobile sets female owned	Pearson Correlation	.153(**)	.062(**)	.281(**)	1	.735(**)	.218(**)	.188(**)	.199(**)
	Sig. (2-tailed)	0	0	0		0	0	0	0
	N	3991	4078	4113	4113	4113	4113	4113	4113
Total Number of mobile sets	Pearson Correlation	.180(**)	.253(**)	.857(**)	.735(**)	1	.252(**)	.278(**)	.250(**)
	Sig. (2-tailed)	0	0	0	0		0	0	0
	N	3991	4078	4113	4113	4113	4113	4113	4113
Make calls on FLL/WLL	Pearson Correlation	.246(**)	0.025	.192(**)	.218(**)	.252(**)	1	.445(**)	.282(**)
	Sig. (2-tailed)	0	0.113	0	0	0		0	0
	N	3991	4078	4113	4113	4113	4113	4113	4113
Make calls on Mobile	Pearson Correlation	.166(**)	.073(**)	.251(**)	.188(**)	.278(**)	.445(**)	1	.325(**)
	Sig. (2-tailed)	0	0	0	0	0	0		0
	N	3991	4078	4113	4113	4113	4113	4113	4113
Number of SMS messages sent	Pearson Correlation	.200(**)	0.014	.204(**)	.199(**)	.250(**)	.282(**)	.325(**)	1
	Sig. (2-tailed)	0	0.361	0	0	0	0	0	
	N	3991	4078	4113	4113	4113	4113	4113	4113

** Correlation is significant at the 0.01 level (2-tailed).

The econometric model (logistic regression) further shows that as respondent family income increases their demand for various telecommunication services also increases progressively with respect to FLL, WLL and internet. In case of mobile odds value shows that demand is only noted in the high income groups whereas the future demand for computer is reported in low income group. Almost the same trend has been noted in rural area. Table-3.9 shows results of Econometric Model (Logistic Regression) for demand of telecommunication services.

Table-3.9
Results of Econometric Model (Logistic Regression) for Demand of Telecommunication Services, Pakistan, 2008

Income		B	S.E	Wald	DF	Sig.	Exp(B)	95.0% C.I.	
								Lower	Upper
FLL									
Step 1(a)	quint2			4.821	4	0.306			
	quint2(1)	0.17	0.142	1.447	1	0.229	1.186	0.898	1.566
	quint2(2)	0.224	0.151	2.198	1	0.138	1.251	0.93	1.682
	quint2(3)	0.238	0.138	2.984	1	0.084	1.269	0.969	1.662
	quint2(4)	0.307	0.153	4.006	1	0.045	1.359	1.006	1.835
	Constant	-1.974	0.104	359.284	1	0	0.139		
WLL									
Step 1(a)	quint2			14.802	4	0.005			
	quint2(1)	0.244	0.209	1.363	1	0.243	1.276	0.848	1.92
	quint2(2)	0.374	0.218	2.955	1	0.086	1.454	0.949	2.227
	quint2(3)	0.592	0.194	9.343	1	0.002	1.808	1.237	2.642
	quint2(4)	0.687	0.21	10.674	1	0.001	1.988	1.316	3.001
	Constant	-2.946	0.156	354.474	1	0	0.053		
MOBILE									
Step 1(a)	quint2			12.509	4	0.014			
	quint2(1)	-0.009	0.098	0.008	1	0.929	0.991	0.818	1.201
	quint2(2)	-0.151	0.107	1.987	1	0.159	0.86	0.698	1.061
	quint2(3)	-0.191	0.097	3.894	1	0.048	0.826	0.683	0.999

	quint2(4)	0.148	0.108	1.864	1	0.172	1.159	0.938	1.434
	Constant	-0.427	0.07	37.478	1	0	0.653		
COMPUTER									
Step 1(a)	quint2			17.825	4	0.001			
	quint2(1)	0.319	0.107	8.936	1	0.003	1.376	1.116	1.695
	quint2(2)	0.117	0.117	0.986	1	0.321	1.124	0.893	1.414
	quint2(3)	-0.072	0.109	0.435	1	0.51	0.931	0.752	1.152
	quint2(4)	-0.041	0.124	0.11	1	0.741	0.96	0.753	1.224
	Constant	-1.094	0.079	193.652	1	0	0.335		
INTERNET									
Step 1(a)	quint2			60.368	4	0			
	quint2(1)	0.54	0.122	19.684	1	0	1.716	1.352	2.179
	quint2(2)	0.595	0.129	21.184	1	0	1.813	1.407	2.336
	quint2(3)	0.672	0.118	32.254	1	0	1.958	1.553	2.468
	quint2(4)	0.97	0.128	57.54	1	0	2.639	2.053	3.39
	Constant	-1.674	0.093	320.726	1	0	0.188		

a Variable(s) entered on step 1: quint2.

Table-3.10 shows result of econometric model for expenditure incurred on use of various telecommunication services. It is noted that the expenditure on FLL increases with rise in income quintiles except for income quintile-2

The econometric model (logistic regression) further shows that as family income increases the expenditure on mobile phone use increases. The expenditure on calling cards shows increase only in the high income quintile.

Table-3.10
Results of Econometric Model (Logistic Regression) for Expenditure on telecommunication Services, Pakistan, 2008

Income		B	S.E.	Wald	Df	Sig.	Exp(B)	95.0% C.I.	
								Lower	Upper
FLL/WLL									
Step 1(a)	quint2			166.855	4	0			
	quint2(1)	-0.323	0.198	2.644	1	0.104	0.724	0.491	1.068
	quint2(2)	0.084	0.191	0.196	1	0.658	1.088	0.749	1.582
	quint2(3)	0.713	0.171	17.345	1	0	2.041	1.459	2.855
	quint2(4)	1.517	0.184	68.097	1	0	4.557	3.179	6.533

	Constant	-0.701	0.152	21.337	1	0	0.496		
MOBILE									
Step 1(a)	quint2			396.129	4	0			
	quint2(1)	0.36	0.119	9.2	1	0.002	1.433	1.136	1.809
	quint2(2)	1.116	0.122	84.208	1	0	3.054	2.406	3.876
	quint2(3)	1.523	0.114	179.797	1	0	4.587	3.672	5.731
	quint2(4)	2.157	0.132	265.73	1	0	8.647	6.672	11.21
	Constant	-1.166	0.091	164.653	1	0	0.312		
INTERNET									
Step 1(a)	quint2			21.383	4	0			
	quint2(1)	-0.02	0.426	0.002	1	0.962	0.98	0.426	2.257
	quint2(2)	-0.334	0.432	0.596	1	0.44	0.716	0.307	1.671
	quint2(3)	-0.101	0.375	0.073	1	0.787	0.904	0.433	1.885
	quint2(4)	0.733	0.362	4.11	1	0.043	2.081	1.025	4.227
	Constant	-1.553	0.332	21.908	1	0	0.212		
CALLING CARDS									
Step 1(a)	quint2			15.371	4	0.004			
	quint2(1)	-0.038	0.581	0.004	1	0.948	0.963	0.308	3.004
	quint2(2)	-0.152	0.63	0.058	1	0.81	0.859	0.25	2.957
	quint2(3)	0.677	0.501	1.826	1	0.177	1.968	0.737	5.257
	quint2(4)	1.272	0.487	6.826	1	0.009	3.568	1.374	9.263
	Constant	-2.398	0.426	31.624	1	0	0.091		

Variable(s) entered on step 1: quintile 2.

In case of rural area almost same trend is observed between family income and expenditure on telecommunication services.

3.5 Problem faced and disadvantages of telecommunication services

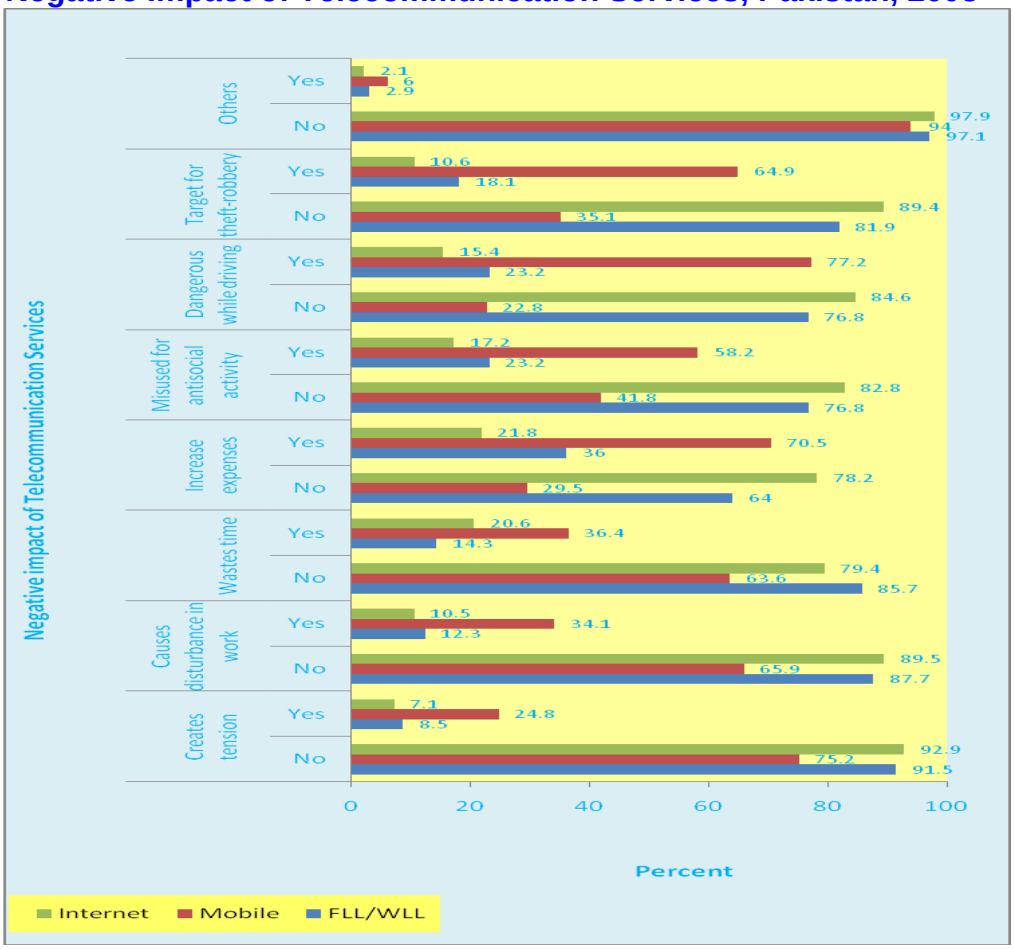
Almost three-fifths (57 percent) respondents faced problem while 36 percent faced no problem and 7 percent did not respond. One-third of the respondents (33percent) reported coverage problem (weak signals) and about three-tenths (29.0 percent) reported that speech is not clear, whereas 23 percent reported congestion/line busy problem and 22 percent complained of frequent call disconnection. Internet disconnection problem has been reported by 11 percent respondents and 13 percent reported helpline / directory assistance problem by the respondents. Urban respondents faced more problems than rural respondents. Males reported facing more problem than female respondents Annex Tables 3.72 and 3.73).

3.5.1 Negative Impact

The respondents reported various types of negative impact / disadvantages of phone/internet services. Figure below shows various disadvantages / negative effect of telecommunication services such as dangerous while driving (78 percent to 85 percent) danger of theft / robbery (65 percent in case of mobile) increase in expenses (36 percent) in case of FLL/WLL, 70 percent in case of mobile to 78 percent in case of internet and misuse for anti-social activities 58 percent in case of mobile, 23 percent for FLL/WLL and 12 percent for internet. About one-third of the mobile users (36 percent) reported it wastes time (Annex Table 3.74 to 3.79).

Figure-3.5

Negative Impact of Telecommunication Services, Pakistan, 2008



Source: Annex Tables 3.74 to 3.79

3.6 Suggestions by respondents

Most of the respondents gave suggestions by repeating the problem they have been facing by using telecommunication services. Mostly the respondents reported asking reduction in call rates for mobile and proper explanation of tariff packages announced by mobile companies and for the hidden charges and taxes to be explained to telecommunication users.

Chapter-4

Survey Methodology

Pakistan Telecommunication Authority's TOR for "An Analysis of Socio - economic Impact of Telecommunication Growth and Telecommunication Indicator" required two types of surveys to be conducted in the country. These were:

i. Non Targeted Survey covering 10,000 respondents.
ii. Targeted Survey covering 5000 respondents.

4.1 Non-targeted Survey

Keeping in view the Terms of Reference (TOR) of the Project, 10,000 Respondents were required to fill in the one page questionnaire in all the four Provinces, including Islamabad, AJK, FANA and FATA (covering rural and urban areas of the country). Convenient sampling technique was adopted for non-targeted survey considering the different categories of users representing rural and urban areas from different socio economic strata (SES) of the society covering households, business and working personnel. The sample covered the formal and informal sectors, geographic, community and income variation dimensions. The survey covered 70 percent Urban and 30 percent rural respondents.

Keeping in view the TOR of the Project, Questionnaire was prepared by social scientists, statisticians, telecom experts and it was finalized after discussion with PTA experts. The Non-Targeted Questionnaire is designed to check telecommunication awareness and the degree of penetration among the respondents.

In order to get replies from 10,000 respondents it was envisaged that more questionnaires should be distributed to keep allowance of non-response from the respondents or getting incomplete information which might not be useful for analysis. Around 15,000 Non Targeted Questionnaires were distributed, 14,000 in Urdu and 1000 in Sindhi Language for interior Sindh area. The Non Targeted Survey Questionnaires were widely distributed to collect the data. Multiple sources of information were used to collect information. The Non Targeted Questionnaire distributed were filled in by the respondents and collected back on the same day or the next day. The information was collected through students and teachers of schools and colleges, Local bodies/town committee's representatives, Non-Government organizations, retired employees of telecommunication organizations, social workers in Punjab, NWFP, AJK, FANA and FATA. The Non Targeted survey was also conducted by distributing the Questionnaires through enumerators / surveyors. These enumerators / Surveyors collected back the filled in forms on the same day or next day or subsequent days.

A total of 10604 Questionnaires were considered for analysis. The province - wise distribution of survey is given in the following Table-4.1. The data was collected in all the provinces, regions covering districts. The list of districts is placed at Annex-4.1.

Table-4.1

Distribution of Respondents covered in Non-Targeted Survey, Pakistan, 2008

(Percent)

Province	Urban	Rural	Total
Punjab	60.3	47.9	56.0
Sindh	23.6	14.6	20.4
NWFP	8.0	26.9	14.6
Balochistan	6.9	6.9	6.9
AJK/FANA	1.2	3.7	2.1
Total	100	100	100

The pre-testing of Questionnaire for the Non-Targeted Survey was conducted at Islamabad and Karachi. The Non-Targeted Questionnaires were to be filled in by the respondents without help of enumerators / surveyors. The observations during pre-testing were used for fine tuning up of the Questionnaire.

4.2 Targeted Survey

Pakistan Telecommunication Authority (PTA) TOR also required to carry out survey of 5000 respondents targeting households and business working personnel. The requirement was that out of 5000 respondents 80 percent targeted survey should focus on households and 20 percent information should be gathered from business and working persons. Hence business / working personnel survey comprised of 1000 respondents whereas household survey comprised of 4000 respondents.

Two questionnaires one for household and other for business of were designed. These were designed by TEACH experts who were from the field of economics, sociology, statistics and telecommunications. The Targeted Questionnaires were finalized after discussions between PTA and TEACH experts.

For Targeted Survey, occupations / professions are necessary. The major occupations/professions were taken from census report. TEACH experts divided the professions/occupations format with 10 major heads and further divided into sub heads. A detailed list of occupations is placed at Annex-4.2.

The enumerators for the survey were selected from respective areas of survey. The enumerators comprised of both genders. The enumerators spoke the languages of their respective survey areas. They were M.Sc. / M Phil in statistics and related faculties of various universities. Training of the enumerators / surveyors were carried out by TEACH experts at Islamabad and Karachi. The enumerators were informed about the objectives of the project and logic of the

questionnaire by giving proper training in the context of Terms of Reference of the survey.

The Targeted Survey was carried out for 5284 respondents through enumerators with 4000 Questionnaires for household entities and 1000 business entities in 65 districts of the country covering rural and urban residence in all the provinces including Islamabad and AJK / FATA. The urban areas covered the big cities and other urban areas (small cities and towns) (Annex-3). The tentative breakdown of the targeted survey (household & business) is given in the following Table.

Table-4.2
Distribution of Respondents covered in targeted survey by Region, Pakistan, 2008

(Percent)

Area	Household			Business			Total
	Urban	Rural	Total	Urban	Rural	Total	
Punjab	48.4	50.8	49.3	50.7	54.1	51.7	49.8
Sindh	30.4	28.4	29.6	23.6	24.7	23.9	28.3
NWFP	10.2	12.4	11.1	17.3	11.2	15.5	12.1
Balochistan	6.2	5.6	6.9	5.2	5.9	5.4	5.9
AJK/NA	4.8	2.8	40	3.2	4.1	3.5	3.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

A multistage stratified sampling technique used covering respondents from different socio-economic strata (SES) including commercial and corporate sector of the population. In order to minimize errors and ensure quality of response proper supervision was carried out by TEACH staff, supervisors and selected professors of the universities in Balochistan, Punjab and NWFP. Data entry was carried out by experienced key punch operators to minimize the data entry errors.

Copies of Non-targeted and Targeted Questionnaires (Business and Household respondents) is placed at Annex-4.3 to 4.5

Annexes

Annex-1.1

Respondent's Remarks

As a part of questionnaire for Household and Business (5000), there was an item for remarks and suggestion. Only about 698 respondents offered remarks. A summary of remarks has been prepared and described as under:-

i. Many respondents asked for improvement in network–(75).
ii. Respondents raised coverage problem related to mostly mobile and WLL–(32).
iii. The respondents complained about high call rates–(38).
iv. The respondents informed that tariff plan of cellular are not clear–(19).
v. Demand for FLL local call duration to be increased–(26).
vi. The respondents asked for FLL line rent reduction or abolition–(22).
vii. The respondents were not happy with billing problem–(29).
viii. Demand program for creating awareness about Telecom Service–(10).
ix. The respondents demand lower price for of Mobile WLL Handsets–(10).
x. The respondents complained about poor quality of service of telecom service – (30).
xi. The respondents complained that their demands for FLL in certain areas–(11).
xii. The respondents want to have free FLL local calls and free SMS and internet access facility–(47).
xiii. The respondents asked for proper registration of SIM holders for mobile connection–(22).
xiv. The respondents reported poor response from service Providers Company–(30).
xv. The respondents state disadvantage of cell phone like creating tension disturbance during work–(40).
xvi. The respondents suggest that the cell phones should not to be given to youth as it has adverse effects on them–(20).

xvii. The respondents desired good / cheap packages for mobile for students, teachers and workers–(12).

xviii. The respondent informed that to avoid busy network, infrastructure be increased(10).

xix. The respondents informed that telecom service is necessity and it should be provided in all areas at cheaper rates–(10).

xx. The respondents appreciate beneficial impact of telecom–(115).

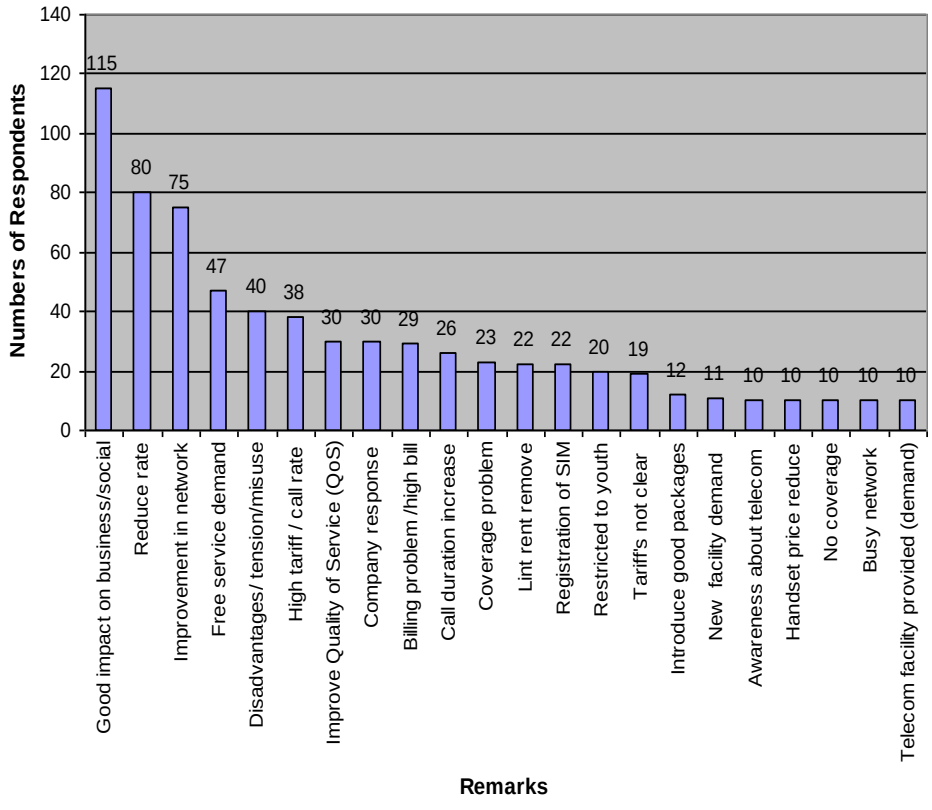
xxi. Some complained about no coverage–(10).

xxii. Some demanded to reduce call rates–(80).

The remarks are note worthily and reflect acceptance of telecom as part of socio economic system.

The following Figure shows the remarks of respondents:

Figure: Respondents Remarks, Pakistan, 2008



Annex-4.1

List of Occupations

10. Senior Professionals

11. Elected Representatives (MNAs, Senators, MPAs, District Nazim)
12. Business, Industrial and Corporate Sector Executives, Bankers, Investors, Stock companies executives.
13. Marketing and Media executives
14. Print, Electronic, Senior Media Personnel
15. Professors
16. Senior Doctors, Specialists
17. Senior Engineers, Architects
18. Senior Lawyers, Solicitors, Advocates of High Court and Supreme Court
19. Senior Accounts Experts (CA & MA)

20. Junior or Mid – Level Professionals

21. Teachers, college & professional college teachers, doctors, engineers, overseers, supervisors, sales/marketing officials
22. Advocates, lawyers, solicitor
23. General health providers (Nurses, Para medics, Hakims, Homeopaths)
24. Accountants, cashiers, auditors, mid level bureaucrat
25. News, Journalist, correspondents, journalist, designer in printing, advertising, media personnel, photographer.
26. Social workers
27. Local body elected representatives/councillor.

30. Business

31. Whole Sale & Retail business (carpenter, electronic, construction material and tile, sanitary, electric, departmental store, publisher, printer etc)

32. Shop keeper (grocery general merchandise, chemist, travel agents, sales officer.
33. Estate agents, property dealers, brokers (Arthies), middle man, contractor.
34. Restaurant and other eatable shop, nan shop, milk shop.
35. Clinic, medical centre & other health related
36. Mechanic, or any other repair shop
37. Small industry or factory owner
38. Vendor/ Hawkers and other related workers
39. Salesman, tailor, cushion & upholstery

40. Service Related Workers

41. Utility workers, builders/repairers (plumbers, electricians, mechanics, carpenters, masons, lineman of gas, electric, phone companies.
42. Taxi and Rickshaw drivers, chauffeurs van & pickup, bus & truck drivers
43. Cook, domestic servants, waiter
44. Security & law and order maintainers
45. Repair workers (bicycles, motorcycles, cars, trucks, AC fridge, electronic & electrical gadgets watch etc)
46. Barber
47. Transporters

50. Office Workers

- **51.** Clerks, cashiers, accounts clerks, billing clerks, Receptionists, Telephone Operator, call centre workers, typist, computer clerk
- **52.** Private company office workers, manager in shops.
- **53.** Government servant
- **54.** Semi Government servant
- **55.** Peon

60. Skilled Worker

70. Non-Skilled worker/ labourer

- **71.** Daily wages earners
- **72.** Constructor workers
- **73.** Helpers / workers employed in shops, small factories / industries workers.
- **74.** Unskilled workers

80. Farmers Cultivators

- **81.** Farmers
- **82.** Farm labourer
- **83.** Cattle grazer, milking man
- **84.** Other agriculture worker
- **85.** Seed related worker
- **86.** Pesticider
- **87.** Dairy farm, cattle raiser
- **88.** Bee keeper, flower grower

90. Persons not working

- **91.** Students
- **92.** House wives
- **93.** Disabled
- **94.** Senior citizens / Retired persons
- **95.** Landlords

Annex-4.2

Districts of various Provinces/Region involved in the survey

S/N	Punjab	Sindh	Balochistan	NWFP	AJK & NA
1	Gujranwala	Dadu	Khuzdar	Abbottabad	Muzafarabad
2	Bahawalpur	Ghotki	Loralai	Bannu	Mirpur
3	Bhakkar	Hyderabad	Quetta	Charsaddah	Rawalakot
4	D.G.Khan	Jacobabad	Sibi	Chitral	Northern Areas
5	Faisalabad	Karachi	Uthal	D.I.Khan	Bhamber
6	Gujrat	Khairpur	Qila Saifullah	Dir	Kotli
7	Islamabad	Larkana	Lasbela	Haripur	Bagh
8	Jhang	Matiari		Kohat	
9	Jhelum	Mirpur Khas		Laki Marwat	
10	Kasur	Shikarpur		Mansehra	
11	Khanewal	Sukkur		Mardan	
12	Khushab	Tando Allah Yar		Peshawar	
13	Lahore	Tando Muhammad Khan		Swabi	
14	Mandi Bahauddin	Thatta		Swat	
15	Mianwali			Hangu	
16	Multan			Karak	
17	Muzaffargarh			Malakand	
18	Narowal			Noshera	
19	Okara			Batgram	
20	Rahim Yar Khan			FATA	
21	Rajanpur			Tank	
22	Rawalpindi				
23	Sahiwal				
24	Sargodha				
25	Sheikhupura				
26	Sialkot				
27	Toba Take Singh				
28	Vehari				
29	Lodhran				
30	Attock				
31	Bahawal Nagar				
32	Layyah				

Total Number of Districts involved is 81 Districts

Annex-4.3

Questionnaire Non-targeted

Province: | **District:** | **Area: Rural** | **City** | **Other**

- **Please, tick appropriate boxes.**

Q.1 Do you know about any of the following telecom services / gadgets:

Fixed phone	01	Wireless Local Loop (WLL)	02	Mobile	03
Short Messaging Service (SMS)	04	Multimedia Messaging Service (MMS)	05	WiMax / Broadband	06
Personal Computer (PC)	07	Internet	08	Calling Cards	09
Public Call Office (PCO) / Payphone	10	Fax	11	Car tracker	12

Q.2 Do you use any one or more of these telecom services? Yes 1 No 0

Fixed phone	01	WLL	02	Mobile	03	SMS	04	MMS	05
WiMax/Broadband	06	PC	07	Internet	08	Calling Cards	09	PCO/Payphone	10
Fax	11	Car tracker	12						

Q.3 Do you own any one or more of these following telecom services? Yes 1 No 0

Fixed phone	01	WLL	02	Mobile	03	WiMax/Broadband	04	PC	05	Internet	06	Fax	07
Car tracker	08												

Q.4 If not, what are the reasons ?

	Facility not available	Cannot afford	I have no use of it	Find it complicated
	1	2	3	4
FLL/WLL	11	21	31	41
Mobile	12	22	32	42
Internet	13	23	33	43

Q.5 If you don't have a phone and you want to phone someone, which facility do you use?

PCO / Payphone	01	Neighbours	02	Relatives/Friends	03	Office	04

Q.6 If you don't have Internet connection, where do you go to use?

At Office	01	Neighbours	02	Friend / Relative	03	Educational Institution	04	Net Café	05

Q.7 Which facilities, out of the following, would you like to own in future?

Fixed phone	01	WLL	02	Mobile	03	WiMax/Broadband	04	PC	05	Internet	06	Fax	07
Car tracker	08	Other					09						

Q.8 Do you find that Fixed Phone / WLL / Mobile / Internet is beneficial for

	Fixed Phone/WLL		Mobile		Internet	
	Yes	No	Yes	No	Yes	No
Society / Culture	1	0	1	0	1	0
General interaction	1	0	1	0	1	0
Business/Trade	1	0	1	0	1	0
Employment / Work	1	0	1	0	1	0
Farm Management	1	0	1	0	1	0
Savings	1	0	1	0	1	0
Family Cohesion	1	0	1	0	1	0
Health / Medical	1	0	1	0	1	0
Education	1	0	1	0	1	0
News / Sports Updates	1	0	1	0	1	0

Name & Address *(optional)* :

Annex-4.4

Questionnaire Targeted (Business)

A. General

Q.1 Date: Day [ ][ ] Month [ ][ ] Year [0][8]

Q.2 Province:

Punjab	Sindh	NWFP	Balochistan	Islamabad	AJK
1	2	3	4	5	6

Q.3 District (name) _____ [ ][ ]

Q.4 Area: Rural [1] Major Urban (big city) [2] Other Urban (small citiy/town) [3]

Q.5 Address of Respondent: _____

_____

B. Respondent's Information

Q.1 Respondent's Sex Male [1] Female [2]

Q.2 Respondent's Age [ ][ ] years

Q.3 Respondent's Educational Qualification

a. No education [0] b. Under matric [1] c. Matric / Intermediate [2] d. Graduate & above [3]

Q.4 Respondent's occupation / profession / business *(Specify)* _____ [ ][ ]

Q.5 Type of phone / phones in use?

None [0] Fixed Land Line (FLL) [1] Wireless Local Loop (WLL) [2] Mobile [3]

Q.6 If you don't have a connection and you want to phone someone, which facility do you use?

PCO/Payphone [1] Neighbours [2] Relatives/Friends [3] Office [4]

Q.7 If you don't have a connection, are you planning to have one

No [0] FLL [1] WLL [2] Mobile [3]

Q.8 If not, what is the reason of not having it?

	Facility not available	Cannot afford	I have no use of it	Find it complicated
	1	2	3	4
FLL/WLL	11	21	31	41
Mobile	12	22	32	42
Internet	13	23	33	43

Q.9 How much money do you spend on telecom use per month?

	Fixed Line / WLL	Mobile Phone	Internet	Calling Cards
Upto Rs.250	11	21	31	41
Rs.251-Rs.500	12	22	32	42
Rs.501-Rs.1000	13	23	33	43
More than Rs.1000	14	24	34	44

Q.10 In general, for what purpose do you use telecom services?

	Usage	FLL / WLL	Mobile Phone	Internet	PCO / Payphone
a.	Business	10	20	30	40
b.	Family matters	11	21	31	41
c.	Social contact / work	12	22	32	42
d.	News / Sports	13	23	33	43
e.	Education	14	24	34	44
f.	Health / Medical	15	25	35	45
g.	Shopping	16	26	36	46
h.	Office / Work	17	27	37	47
i.	Farm Management	18	28	38	48
j.	Live Stock Management	19	29	39	49

Q.11 Do you face any problem while using telecom facility such as:

a.	None 00	b.	Slow Speed-Internet 01
c.	Frequent Disconnect-Internet 02	d.	Congestion/Line Busy 03
e.	Frequent Call Disconnection 04	f.	Speech Not Clear 05
g.	Coverage problem (weak signals) 06	h.	Helpline / Directory Assistance Problem 07
i.	Billing problem 08	j.	Other (specify) 09

C. Socioeconomic Impact of Telecom Growth

Q.12 Impact on time and money

		No impact	Somewhat	Very much	Adverse effect
a.	**Impact on income increase**	11	21	31	41
b.	**Saving in time**	12	22	32	42
c.	**Improved organizational efficiency**	13	23	33	43
d.	**Savings in transportation cost**	14	24	34	44

Q.13 Indicate degree of dependence of your organization / work / job on telecom.

a. none [0] b. somewhat (upto 25%) [1] c. very much (upto 50%) [2] d. total (100%) [3]

D. Fixed Land Line / Wireless Local Loop (FLL / WLL)

Q.14 If phone is out of order, how much time company takes to restore? No. of days [ ][ ][ ]

Q.15 Reason of using WLL

a. fixed network not available [01] b. portability [02] c. better quality ..... [03]

d. more economical [04] e. reliability [05] f. ease and speed of service implementation [06]

g. other (specify) _____ [07]

Q.16 Which type of WLL phone set you use / prefer a. desktop type [1] b. handset type [2]

Q.17 What is primary use of your WLL phone

a. making phone calls [1] b. SMS [2] c. Internet [3] d. Other _____ [4]

E. Mobile

Q.18 Which mobile company's connection do you have?

Mobilink	Ufone	Telenor	Warid	Pak China Mobile (Zong)	Insta
1	2	3	4	5	6

Q.19 How many mobile connections do you have?

a. one [1] b. two [2] c. three [3] d. other (specify) _____ [4]

Q.20 **How many mobile handsets do you have?**

a. one [1] b. two [2] c. three [3] d. other (specify) _____ [4]

Q.21 **Are you aware of Mobile Number Portability (MNP)?** Yes [1] No [0]

Q.22 **If yes, have you availed this service?** Yes [1] No [0]

Q.23 **If yes, have you any problem regarding this service, please specify** _____

_____

Q.24 **Where do you buy your mobile handset from?**

a. Authorised dealer [1] b. Any shop [2]

Q.25 **If you want to buy a mobile phone, at what price would you like to buy?** Rs. [ ][ ][ ][ ][ ][ ]

Q.26 **Which brand of mobile phone you are using?**

Nokia	Sony Ericson	Motorolla	Samsung	Blackberry	LG	Chinese *origin*	Siemens	*Other* (specify)
1	2	3	4	5	6	7	8	

Q.27 **Indicate usage of your mobile phone other than making phone calls?**

a. None [00] b. SMS [01] c. MMS [02] d. Calender [03]

e. Songs [04] f. Radio [05] g. Alarm [06] h. Camera [07]

i. Internet - GPRS/EDGE [08] j. Game / Entertainment [09] k. Fax [10] l. Computer (PDA) [11]

m. TV viewing [12] n. Other value added services _____ [13]

Q.28 **How many SMS messages you send / receive in a day?**

Number of SMS messages sent [ ][ ][ ] Number of SMS messages received [ ][ ][ ]

Q.29 **In which, language you prefer to send / receive SMS messages?**

English [1] Urdu [2] Roman Urdu [3] Other (specify) _____ [4]

Q.30 **For what purpose do you send/receive SMS messages?**

a. Business [1] b. Personal [2] c. Family [3] d. Social (Friends) ..... [4]

e. Education [5] f. News [6] g. Sports [7] h. Other (specify) _____ [8]

F. Internet

Q.31 If you have Internet facility, which type of Internet connection you are using?

Dialup [1] DSL / ADSL [2] Wireless / Broadband [3] Mobile (GPRS/EDGE [4]

Cable Broadband [5]

Q.32 If 'no', would you like to have it? Yes [1] No [0]

Q.33 The reason of not using Internet facility?

a. not required [1] b. service not available [2] c. cannot afford [3] d. too complicated [4]

e. other (specify) _____ [5]

Q.34 If you use Internet, from which place do you use?

Office	Home	Neighbours	Friend / Relative	Educational Institution	Net Café
1	2	3	4	5	6

Q.35 How many persons, make use of one Internet connection in your

a. home [ ][ ][ ] b. office [ ][ ][ ]

Q.36 For what purpose do you use Internet service?

a. E-mail [01] b. Voice communication [02] c. News / Sports/Entertainment ..... [03]

d. Employment help [04] e. Office work [05] f. Business/trade ..... [06]

g. Travel booking [07] h. Studies/Education [08] i. Watching movies ..... [09]

j. Chatting [10] k. Banking [11] l. Health/Medical ..... [12]

m. Online Shopping [13] n. Games [14] o. Other (specify) _____ [15]

Q.37 Do you think that usage of FLL / WLL / Mobile / Internet caused reduction in your

	FLL / WLL [1]			Mobile [2]			Internet [3]		
	No change	Somewhat	Very much	No change	Somewhat	Very much	No change	Somewhat	Very much
a. **Letters**	11	21	31	11	21	31	11	21	31
b. **Face to face meetings**	12	22	32	12	22	32	12	22	32
c. **Travelling**	13	23	33	13	23	33	13	23	33

Please assess effect of Fixed phone / WLL / Mobile / Internet use on following aspects of life

		FLL / WLL 1			Mobile 2			Internet 3		
		No change	Somewhat	Very much	No change	Somewhat	Very much	No change	Somewhat	Very much
Q.38	Has it broadend your social circle?	11	21	31	11	21	31	11	21	31
Q.39	Has it helped in family cohesion?	12	22	32	12	22	32	12	22	32
Q.40	Has it improved access to doctor / health facility'	13	23	33	13	23	33	13	23	33
Q.41	Has it helped in knowledge / education?	14	24	34	14	24	34	14	24	34

Q.42a To what extent phone (FLL / WLL / Mobile) and Internet has made an impact in terms of the following benefit

		FLL / WLL 1			Mobile 2			Internet 3		
		No Impact	Somewhat	Very mucl	No Impact	Somewhat	Very mucl	No Impact	Somewhat	Very mucl
a.	Helpful in solving day to day problems.	11	21	31	11	21	31	11	21	31
b.	Help in search of work / livelihood.	12	22	32	12	22	32	12	22	32
c.	Increase in efficiency at work.	13	23	33	13	23	33	13	23	33
d.	Helpful in finding new customer.	14	24	34	14	24	34	14	24	34
e.	Increase in sales and turnover.	15	25	35	15	25	35	15	25	35
f.	Increase in income.	16	26	36	16	26	36	16	26	36
g.	Helpful in instant market/price information.	17	27	37	17	27	37	17	27	37
h.	Providing information on new products.	18	28	38	18	28	38	18	28	38
i.	Better interaction with utility departments (gas, water, electricity etc.) public service departments and the Government.	19	29	39	19	29	39	19	29	39

Q.42b To what extent phone (FLL / WLL / Mobile) and Internet has made an impact in terms of the following benefits

		FLL / WLL 1			Mobile 2			Internet 3		
		No Impact	Somewhat	Very much	No Impact	Somewhat	Very much	No Impact	Somewhat	Very much
a.	**Ease of remittances.**	11	21	31	11	21	31	11	21	31
b.	**Reduction in transaction time of deals.**	12	22	32	12	22	32	12	22	32
c.	**Helpful in crop management.**	13	23	33	13	23	33	13	23	33
d.	**Helpful in livestock management.**	14	24	34	14	24	34	14	24	34

G. Computer

Q.43 Where do you use Computer?

a. home [1] b. office [2] c. neighbours [3] d. net café [4]

e. educational institution [5] f. any other (please specify) _____ [6]

Q.44 For what purpose do you use Computer?

a. professional work [1] b. entertainment / sports [2] c. Internet [3]

d. any other (specify) _____ [4]

Q.45 If you don't use a computer - what is the reason?

a. not required [1] b. cannot afford [2] c. any other (specify) _____ [3]

Q.46 In future, would you like to buy a Computer? Yes [1] No [0]

Q.47 If yes, at what price? Rs. [ ][ ][ ][ ][ ]

H. Long Distance International (LDI)

Q.48 Do you use LDI Calling Cards? Yes [1] No [0]

Q.49 What is your expenditure on LDI Calling Cards per month? Rs. [ ][ ][ ][ ][ ]

Q.50 What do you use LDI Calling Cards for

a. nation wide calls [1] b. overseas calls [2]

Q.51 **Give impact assessment of competition in LDI and Calling Cards regarding**

		No effect	Somewhat	Very much
a.	**Increased business through overseas contact**	0	1	2
b.	**Increased family contact at national and International level**	0	1	2
c.	**Reduction in business travel**	0	1	2
d.	**Reduction in expenditure on telecom**	0	1	2

I. **Value Added Services**

Q.52 **Indicate beneficial impact of using Universal Access Number (UAN), Premium Rate Number and Toll Free Access Service on business**

		Nominal Impact	Good Impact	Substantial Impact
a.	**UAN** (111-xxx-yyy)	11	21	31
b.	**Premium Rate Number** (0900-xxx-yyy)	12	22	32
c.	**Toll Free Number** (0800-xxx-yyy)	13	23	33

Q.53 **Do you think access to above services through mobile will be useful for you?**

No 0 Yes 1 Don't know 2

Q.54 **Respondent's monthly income:** Rs. _____

- If you have any suggestions, please tell frankly

_____

_____

Time taken on Interview ____ hrs. ____ mins.

Interviewer's remarks, if any: _____

_____

Signature: _____ Date: ____

Interview ended at:	☐☐ hrs. ☐☐ mins.
Name of Interviewer:	_____
Checked by Supervisor:	_____
Supervisor's comments, if any:	_____
Data entered by (Name):	_____
Data entry checked by:	_____

Annex-4.5

Questionnaire Targeted (Household)

A. General

Q.1 Date: Day ☐☐ Month ☐☐ Year 0 8

Q.2 Province:

Punjab	Sindh	NWFP	Balochistan	Islamabad	AJK
1	2	3	4	5	6

Q.3 District (name) _____ ☐☐

Q.4 Area: Rural ☐1 Major Urban (big city) ☐2 Other Urban (small city/town) ☐3

Q.5 Address of Respondent: _____

_____

B. Background Information of Respondent/Household Head

Q.1 Respondent's Sex Male ☐1 Female ☐2

Q.2 Age of Household Head ☐☐ years

Q.3 Educational Qualification of Household Head

a. No education ☐0 b. Under matric ☐1 c. Matric / Intermediate ☐2 d. Graduate & above ☐3

Q.4 What is the occupation / profession of Household Head? *(Specify)* _____ ☐☐

Q.5 What is your family size (Household Size)? ☐☐

Q.6 Which type of phone are you using?

None ☐0 Fixed Land Line (FLL) ☐1 Wireless Local Loop (WLL) ☐2 Mobile ☐3

Q.7 If you don't have a phone and you want to phone someone, which facility do you use?

PCO/Payphone ☐1 Neighbours ☐2 Relatives/Friends ☐3 Office ☐4

Q.8 If you have no phone, which one would you like to have?

None ☐0 FLL ☐1 WLL ☐2 Mobile ☐3

Q.9 If not, what is the reason of not having it?

	Facility not available	Cannot afford	I have no use of it	Find it complicated
	1	2	3	4
FLL/WLL	11	21	31	41
Mobile	12	22	32	42
Internet	13	23	33	43

Q.10 For what purpose do you use following telecom services ?

	Usage	FLL / WLL	Mobile Phone	Internet	PCO / Payphone
a.	Business	10	20	30	40
b.	Family matters	11	21	31	41
c.	Social contact / work	12	22	32	42
d.	News / Sports	13	23	33	43
e.	Education	14	24	34	44
f.	Health / Medical	15	25	35	45
g.	Shopping	16	26	36	46
h.	Office / Work	17	27	37	47
i.	Farm Management	18	28	38	48
j.	Live Stock Management	19	29	39	49

Q.11 If phone is out of order, how much time company takes to restore? No. of days ☐☐☐

Q.12 If you want to buy a handset from where would you buy?

a. Authorised dealer ☐1 b. Any shop ☐2

Q.13 If you want to buy a mobile handset, at what price would you like to buy? Rs. ☐☐☐☐☐☐

Q.14 Which brand of mobile handset are you using?

Nokia	Sony Ericson	Motorolla	Samsung	Blackberry	LG	Chinese *origin*	Siemens	*Other* (specify)
1	2	3	4	5	6	7	8	

Q.15 How many members of your family have mobile handset?

Numbers

Male ☐☐ Female ☐☐

C. General Information

Q.16 How much money do you spend on telecom use per month?

	Fixed Line / WLL	Mobile Phone	Internet	Calling Card
Upto Rs.250	11	21	31	41
Rs.251-Rs.500	12	22	32	42
Rs.501-Rs.1000	13	23	33	43
More than Rs.1000	14	24	34	44

Q.17 For what purpose do you use your fixed phone connection other than making phone calls?

a. Time [01] b. Fax [02] c. Alarm [03] d. Internet [04] e. Voice mail [05]

Q.18 For what purpose do you use your WLL handset other than making phone calls?

a. None [00] b. SMS [01] c. MMS [02] d. Calculator [03]

e. Calender [04] f. Songs [05] g. Radio [06] h. Alarm [07]

i. Camera [08] j. Internet [09] k. Game / Entertainment [10] l. Fax [11]

m. Other value added services _____ [12]

Q.19 For what purpose do you use mobile handset other than making phone calls?

a. None [00] b. SMS [01] c. MMS [02] d. Calender [03]

e. Songs [04] f. Radio [05] g. Alarm [06] h. Camera [07]

i. Internet - GPRS/EDGE [08] j. Game / Entertainment [09] k. Fax [10] l. Computer (PDA) [11]

m. TV viewing [12] n. Other value added services _____ [13]

Q.20 On the average, how many calls do you or your family members make/receive in a day?

a. FLL / WLL: Make [ ][ ][ ] Receive [ ][ ][ ]

b. Mobile: Make [ ][ ][ ] Receive [ ][ ][ ]

Q.21 How many SMS messages do you or your family send / receive in a day?

Number of SMS messages sent [ ][ ][ ] Number of SMS messages received [ ][ ][ ]

Q.22 **In which language do you prefer to send/receive SMS messages?**

Urdu [1] English [2] Roman Urdu [3] Other (specify) _____ [4]

Q.23 **For what purpose do you send/receive SMS messages?**

a. Business [01] b. Family [02] c. Social [03] d. News / Sports [04]

e. Education [05] f. Health / Medical [06] g. Shopping [07] h. Office / Work [08]

i. Farming matters [09] j. Live Stock Matters [10] k. Downloading tunes / songs..... [11]

l. Other _____ [12]

D. **Internet**

Q.24 **Do you have PC (personal computer)?** Yes [1] No [0]

Q.25 **If not, would you like to get one?** Yes [1] No [0]

Q.26 **If yes, how much are you willing to pay for PC?** Rs. [ ][ ][ ][ ][ ]

Q.27 **If you or your family members use Internet, from which place do you use?**

Home	Neighbours	Friend / Relative	Office	Educational Institution	Net Café	Other
1	2	3	4	5	6	7

Q.28 **If you do not have Internet at home, would you like to have one?** Yes [1] No [0]

Q.29 **If you have Internet facility, which type of Internet connection are you using?**

Dialup [1] DSL / ADSL [2] Wireless / Broadband [3] Mobile (GPRS/EDGE [4]

Cable Broadband [5]

Q.30 **Indicate purpose of Internet use?**

a. E-mail [01] b. Voice communication [02] c. News / Sports/Entertainment ..... [03]

d. Employment help [04] e. Office work [05] f. Business/trade ..... [06]

g. Travel booking [07] h. Studies/Education [08] i. Watching movies ..... [09]

j. Chatting [10] k. Banking [11] l. Health/Medical ..... [12]

m. Online Shopping [13] n. Games [14] o. Other (specify) _____ [15]

Q.31	Do the females in your house use Internet?	Yes	1	No	0
Q.32	Do the children in your house use Internet?	Yes	1	No	0

E. Socioeconomic Impact of Telecom Growth

Q.33a Please, assess impact of Phone (FLL/WLL/Mobile) and Internet as beneficial for the following aspects of life.

		FLL / WLL 1			Mobile 2			Internet 3		
		No	Somewhat	Very much	No	Somewhat	Very much	No	Somewhat	Very much
a.	Broadening of social circle	11	21	31	11	21	31	11	21	31
b.	Better family cohesion	12	22	32	12	22	32	12	22	32
c.	Improved access to health / medical facility	13	23	33	13	23	33	13	23	33
d.	Helpful in education	14	24	34	14	24	34	14	24	34
e.	Helpful in solving day to day problems	15	25	35	15	25	35	15	25	35
f.	Improved interactions with civic authorities (gas, electric, water etc.) including e-government	16	26	36	16	26	36	16	26	36
g.	Quick help in emergencies	17	27	37	17	27	37	17	27	37
h.	Increased awareness of employment / work opportunities	18	28	38	18	28	38	18	28	38
i.	Reduced need for travel	19	29	39	19	29	39	19	29	39

Q.33b Please, assess impact of Phone (FLL/WLL/Mobile) and Internet as beneficial for the following aspects of life.

		FLL / WLL 1			Mobile 2			Internet 3		
		No	Somewhat	Very much	No	Somewhat	Very much	No	Somewhat	Very much
a.	Increased savings	11	21	31	11	21	31	11	21	31
b.	Increased income	12	22	32	12	22	32	12	22	32

Q.34 **May I know your monthly family income.** Rs. [ ][ ][ ][ ][ ][ ]

Q.35 **Do you face any problem while using telecom facility such as:**

a. None 00		b. Slow Speed-Internet 01	
c. Frequent Disconnect-Internet 02		d. Congestion/Line Busy 03	
e. Frequent Call Disconnection 04		f. Speech Not Clear 05	
g. Coverage problem (weak signals) 06		h. Helpline / Directory Assistance Problem 07	
i. Billing problem 08		j. Other (specify) _____ 09	

Disadvantages

Q.36 **Do you think that phone (Fixed / WLL / Mobile) and Internet**

	FLL / WLL 1		Mobile 2		Internet 3	
	Yes	No	Yes	No	Yes	No
a. **Creates tension?**	11	10	11	10	11	10
b. **Causes disturbance in work?**	21	20	21	20	21	20
c. **Wastes time?**	31	30	31	30	31	30
d. **Increases expenses?**	41	40	41	40	41	40
e. **Is misused for antisocial activity?**	51	50	51	50	51	50
f. **Is dangerous while driving?**	61	60	61	60	61	60
g. **Is a target for theft / robbery?**	71	70	71	70	71	70
h. **Any Other (specify)**	81		81		81	

- If you have any suggestions, please tell frankly

_____

_____

_____

Time taken on Interview ☐☐ hrs. ☐☐ mins.

Interviewer's remarks, if any: _____

_____

Signature: _____ Date: ☐☐☐☐☐☐

Interview ended at: ☐☐ hrs. ☐☐ mins.

Name of Interviewer: _____

Checked by Supervisor: _____

Supervisor's comments, if any: _____

Data entered by (Name): _____

Data entry checked by: _____

Annex Tables

Volume-I

Annex Table - 5.1

Purpose for using FLL/WLL services by Income level, Pakistan, 2008

(Percent)

Purpose	Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total	
					Percent	Number
Business	18.5	29.2	60	67.1	50.3	589
Family matters	22.8	34.1	66	76.5	56.2	658
Social contact / work	15.2	28.4	57.7	56.5	47.7	558
News / sports	1.1	4.2	8.6	2.4	6.6	77
Education	7.6	10.2	24.4	11.8	19	222
Health / medical	15.2	19.7	34.8	40	30.2	354
Shopping	8.7	13.6	35.2	35.3	28.3	331
Office work	12	13.6	39.7	43.5	31.9	374
Farm management	9.8	9.8	11.6	16.5	11.4	134
Live Stock management	9.8	8.3	8.1	14.1	8.7	102

Annex Table - 5.2

Purpose for using Mobile Phone by Income level, Pakistan, 2008

(Percent)

Purpose	Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total	
					Percent	Number
Business	62	78	81.5	71.8	78.5	919
Family matters	84.8	93.9	89	70.6	88.5	1036
Social contact/work	71.7	84.8	84.4	68.2	82.3	964
News / sports	18.5	23.9	22.5	16.5	22	258
Education	26.1	29.2	31.4	15.3	29.3	343
Health / medical	41.3	49.2	46.6	38.8	46.2	541

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Shopping	23.9	44.3	50.5	36.5	46	539
Office work	29.3	34.5	48.6	52.9	44.2	518
Farm management	19.6	22	16.2	16.5	17.8	208
Live Stock management	15.2	18.6	11.4	16.5	13.7	160

Annex Table - 5.3
Purpose for using Internet Service by Income level, Pakistan, 2008

(Percent)

Purpose	Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total	
					Percent	Number
Business	5.4	7.2	16.8	35.3	15.1	177
Family matters	1.1	4.2	9.6	9.4	7.7	90
Social contact/work	4.3	4.5	14.1	11.8	11	129
News/sports	10.9	8.7	18.8	23.5	16.2	190
Education	10.9	10.2	21.1	29.4	18.4	216
Health / medical	4.3	5.7	8.6	18.8	8.4	98
Shopping	6.5	4.2	10.7	22.4	9.7	114
Office work	5.4	6.8	16.6	29.4	14.4	169
Farm management	2.2	0.8	3	5.9	2.6	31
Live Stock management	2.2	1.1	1.8	5.9	2	23

Annex Table - 5.4
Purpose for using PCO/Payphone by Income level, Pakistan, 2008

(Percent)

Purpose	Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total	
					Percent	Number
Business	14.1	9.8	6.4	5.9	7.8	91
Family matters	16.3	12.5	5.8	4.7	8	94
Social contact/work	14.1	11.4	4.9	4.7	7.1	83

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New/sports	6.5	4.5	0.7	-	2	23
Education	7.6	5.3	2.1	-	3.1	36
Health/ medical	9.8	6.4	2.6	1.2	3.9	46
Shopping	8.7	5.7	2.7	-	3.7	43
Office work	8.7	5.3	2.5	1.2	3.5	41
Farm management	8.7	6.8	1	-	2.8	33
Live Stock management	7.6	6.1	1	-	2.6	30

Annex Table - 5.5
Usage of FLL/WLL caused reduction in Letter writing, Meetings and Travel by Income level, Pakistan, 2008

(Percent)

Impact of FLL/WLL on		Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total
Letters writing						
No change		5.4	5.3	6.2	9.4	6.1
Somewhat		18.5	18.9	32.9	16.5	27.4
Very much		25	26.5	37	52.9	34.8
Not response		51.1	49.2	24	21.2	31.6
Face to face meetings						
No change		5.4	5.3	6	5.9	5.8
Somewhat		27.2	31.8	42.9	34.1	38.5
Very much		14.1	13.3	24.8	34.1	22
Not responded		53.3	49.6	26.3	25.9	33.6
Travelling						
No change		9.8	4.5	7.1	9.4	6.9
Somewhat		21.7	26.1	36.2	32.9	32.5
Very much		17.4	19.7	28.6	31.8	26
Not responded		51.1	49.6	28.1	25.9	34.6
Total	Percent	100	100	100	100	100
	Number	92	264	730	85	1171

Annex Table - 5.6
Usage of Mobile Phone caused reduction in Letter writing, Meetings and Travel by Income level, Pakistan, 2008

(Percent)

Impact of Mobile on	Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total
Letters writing					
No change	9.8	6.4	5.3	5.9	6

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Somewhat		28.3	31.8	35.9	20	33.2
Very much		55.4	56.4	53.2	63.5	54.8
Not responded		6.5	5.3	5.6	10.6	6
Face to face meetings						
No change		15.2	5.7	4.8	4.7	5.8
Somewhat		33.7	48.1	51.8	36.5	48.4
Very much		41.3	40.5	38.1	41.2	39.1
Not responded		9.8	5.7	5.3	17.6	6.7
Travelling						
No change		12	4.2	5.5	4.7	5.6
Somewhat		29.3	43.2	46.2	35.3	43.4
Very much		52.2	48.5	42.2	40	44.2
Not responded		6.5	4.2	6.2	20	6.7
Total	Percent	100	100	100	100	100
	Number	92	264	730	85	1171

Annex Table - 5.7
Usage of Internet caused reduction in Letter writing, Meetings and Travel by Income level, Pakistan, 2008

(Percent)

Internet		Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total
Letters writing						
No change		8.7	11	10.3	15.3	10.7
Somewhat		5.4	10.2	15.6	10.6	13.2
Very much		13	11.7	21.6	40	20.1
Not responded		72.8	67	52.5	34.1	56
Face to face meetings						
No change		8.7	15.2	13.4	23.5	14.2
Somewhat		10.9	10.2	17.4	12.9	14.9
Very much		7.6	6.4	14.9	24.7	13.2
No response		72.8	68.2	54.2	38.8	57.7
Travelling						
No change		14.1	12.9	14.8	22.4	14.9
Somewhat		6.5	12.5	15.3	14.1	13.9
Very much		6.5	6.1	14.2	23.5	12.5
Not responded		72.8	68.6	55.6	40	58.8
Total	Percent	100	100	100	100	100
	Number	92	264	730	85	1171

Annex Table - 5.8
Impact of Telecommunication Growth on income increase, improved efficiency and Savings in transportation cost by Income level, Pakistan, 2008

(Percent)

Impact on		Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total
Income increase						
No impact		50	23.5	13.4	22.4	19.2
Somewhat		26.1	50.4	50	27.1	46.5
Very much		16.3	18.9	27.5	37.6	25.4
Adverse effect		3.3	3	3.3	2.4	3.2
Not respond		4.3	4.2	5.8	10.6	5.6
Saving in time						
No impact		12	6.1	4.5	3.5	5.4
Somewhat		38	39.8	36.3	30.6	36.8
Very much		45.7	51.9	55.5	57.6	54.1
Adverse effect		1.1	0.8	1.8	1.2	1.5
Not respond		3.3	1.5	1.9	7.1	2.3
Improved organizational efficiency						
No impact		21.7	20.1	11.9	12.9	14.6
Somewhat		29.3	35.6	41.5	28.2	38.3
Very much		30.4	31.1	34.8	44.7	34.3
Adverse effect		2.2	1.9	1.6	1.2	1.7
Not respond		16.3	11.4	10.1	12.9	11.1
Savings in transportation cost						
No impact		10.9	5.3	4.2	2.4	4.9
Somewhat		32.6	39	35.2	31.8	35.6
Very much		46.7	50.4	52.9	54.1	51.9
Adverse effect		1.1	0.8	2.6	2.4	2
Not respond		8.7	4.5	5.1	9.4	5.6
Total	Percent	100	100	100	100	100
	Number	92	264	730	85	1171

Annex Table - 5.9
Impact of FLL/WLL on different Benefits of Life by Income level, Pakistan, 2008

(Percent)

FLL/WLL Impact	Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total
Helpful in solving day to day problems					
No response	52.2	49.2	23	15.3	30.7
No impact	6.5	9.1	7.8	12.9	8.4
Somewhat	28.3	25.8	43.7	43.5	38.4
Very much	13	15.9	25.5	28.2	22.5
Help in search of work / livelihood					
No response	55.4	51.9	28.8	27.1	36
No impact	21.7	18.6	19.2	36.5	20.5
Somewhat	14.1	17.8	37.1	22.4	29.9
Very much	8.7	11.7	14.9	14.1	13.7
Increase in efficiency at work					
No response	57.6	51.5	26.4	23.5	34.3
No impact	12	15.2	11.2	20	12.8
Somewhat	26.1	21.6	40.5	30.6	34.4
Very much	4.3	11.7	21.5	25.9	18.4
Helpful in finding new customer					
No response	53.3	52.7	27	20	34.3
No impact	25	19.7	18.8	27.1	20.1
Somewhat	15.2	18.9	37.5	23.5	30.6
Very much	6.5	8.7	16.7	29.4	15
Increase in sales and turnover					
No response	55.4	53	26.4	21.2	34.3
No impact	18.5	20.5	15.6	25.9	17.7
Somewhat	16.3	18.6	39.5	31.8	32.4
Very much	9.8	8	18.5	21.2	15.6
Increase in income					
No response	55.4	53.4	25.3	23.5	33.9
No impact	21.7	21.6	17.3	28.2	19.4
Somewhat	17.4	18.9	41	28.2	33.2
Very much	5.4	6.1	16.4	20	13.5
Helpful in instant market/ price information					
No response	55.4	53	26.7	27.1	34.9
No impact	21.7	18.9	14.5	23.5	16.7
Somewhat	13	17.8	36.8	25.9	29.9

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Very much		9.8	10.2	21.9	23.5	18.4
Providing information on new products						
No response		56.5	54.2	27.9	24.7	35.9
No impact		23.9	18.6	21.1	24.7	21
Somewhat		14.1	17.4	32.9	27.1	27.5
Very much		5.4	9.8	18.1	23.5	15.6
Better interaction with utility departments						
No response		58.7	54.2	29.9	30.6	37.7
No impact		16.3	15.5	16.7	16.5	16.4
Somewhat		18.5	19.3	36.8	23.5	30.5
Very much		6.5	11	16.6	29.4	15.5
Total	Percent	100	100	100	100	100
	Number	92	264	730	85	1171

Annex Table - 5.10
Impact of Mobile Phone on different Benefits of Life by Income level, Pakistan, 2008

(Percent)

Mobile Impact	Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total
Helpful in solving day to day problems					
No response	4.3	1.5	3	12.9	3.5
No impact	10.9	6.4	6.2	10.6	6.9
Somewhat	50	53	47.7	36.5	48.2
Very much	34.8	39	43.2	40	41.3
Help in search of work / livelihood					
No response	9.8	7.6	10	20	10.2
No impact	26.1	17.4	19.6	31.8	20.5
Somewhat	35.9	45.8	44.9	30.6	43.4
Very much	28.3	29.2	25.5	17.6	26
Increase in efficiency at work					
No response	8.7	5.3	7.7	20	8.1
No impact	20.7	20.5	12.2	18.8	15.2
Somewhat	42.4	42.4	48.1	35.3	45.4
Very much	28.3	31.8	32.1	25.9	31.3
Helpful in finding new customer					
No response	9.8	6.4	9.3	21.2	9.6
No impact	41.3	29.2	20.3	20	23.9
Somewhat	26.1	37.5	43.8	29.4	40

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Very much		22.8	26.9	26.6	29.4	26.6
Increase in sales and turnover						
No response		9.8	8.3	7.8	21.2	9.1
No impact		34.8	27.7	17.8	23.5	21.8
Somewhat		33.7	38.6	48.5	24.7	43.4
Very much		21.7	25.4	25.9	30.6	25.8
Increase in income						
No response		10.9	5.3	6.6	21.2	7.7
No impact		45.7	30.3	19.2	25.9	24.3
Somewhat		26.1	43.9	50.4	31.8	45.7
Very much		17.4	20.5	23.8	21.2	22.4
Helpful in instant market / price information						
No response		10.9	9.1	7.1	23.5	9.1
No impact		30.4	29.2	18.8	21.2	22.2
Somewhat		40.2	36.4	46.2	23.5	41.8
Very much		18.5	25.4	27.9	31.8	26.9
Providing information on new products						
No response		12	11	9.5	24.7	11.1
No impact		33.7	29.9	23.4	25.9	25.9
Somewhat		35.9	37.5	43.6	25.9	40.3
Very much		18.5	21.6	23.6	23.5	22.7
Better interaction with utility departments						
No response		16.3	13.3	14.5	36.5	16
No impact		30.4	34.1	30.5	20	30.6
Somewhat		33.7	33	43	32.9	39.3
Very much		19.6	19.7	11.9	10.6	14.2
Total	Percent	100	100	100	100	100
	Number	92	264	730	85	1171

Annex Table - 5.11
Impact of Internet Service on different Benefits of Life by Income level, Pakistan, 2008

(Percent)

Internet Service Impact	Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total
Helpful in solving day to day problems					
No response	68.5	67.4	49.7	41.2	54.6
No impact	17.4	17	22.6	30.6	21.5
Somewhat	12	9.8	16.2	16.5	14.4
Very much	2.2	5.7	11.5	11.8	9.5
Help in search of work / livelihood					
No response	68.5	68.9	51.5	42.4	56.1
No impact	7.6	12.9	21	18.8	17.9
Somewhat	17.4	11.7	15.6	24.7	15.5
Very much	6.5	6.4	11.9	14.1	10.4
Increase in efficiency at work					
No response	68.5	68.9	51.2	36.5	55.5
No impact	13	14.8	20.8	16.5	18.5
Somewhat	14.1	9.5	15.1	24.7	14.4
Very much	4.3	6.8	12.9	22.4	11.5
Helpful in finding new customer					
No response	69.6	69.3	52.6	37.6	56.6
No impact	15.2	16.3	25.6	22.4	22.5
Somewhat	12	9.1	12.5	16.5	12
Very much	3.3	5.3	9.3	23.5	9
Increase in sales and turnover					
No response	69.6	70.1	53.3	42.4	57.6
No impact	18.5	17	25.8	22.4	23
Somewhat	7.6	8.3	11.1	18.8	10.8
Very much	4.3	4.5	9.9	16.5	8.7
Increase in income					
No response	69.6	69.3	51.8	41.2	56.4
No impact	18.5	20.1	26	22.4	23.8
Somewhat	8.7	7.6	13.6	18.8	12.2
Very much	3.3	3	8.6	17.6	7.6
Helpful in instant market / price information					
No response	69.6	68.9	51.5	44.7	56.4
No impact	10.9	13.6	21	12.9	17.9
Somewhat	10.9	10.6	14.1	20	13.5
Very much	8.7	6.8	13.4	22.4	12.2
Providing information on new products					
No response	70.7	70.1	52.1	37.6	56.5

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No impact		9.8	13.6	18.5	14.1	16.4
Somewhat		10.9	11	12.2	25.9	12.8
Very much		8.7	5.3	17.3	22.4	14.3
Better interaction with utility departments						
No response		70.7	70.1	54.2	49.4	58.8
No impact		14.1	15.2	29.7	27.1	25
Somewhat		7.6	10.6	9.5	18.8	10.2
Very much		7.6	4.2	6.6	4.7	6
Total	Percent	100	100	100	100	100
	Number	92	264	730	85	1171

Annex Table - 5.12
FLL/WLL made Impact on different Benefits of Life by Income level, Pakistan, 2008

(Percent)

Impact of FLL/ WLL		Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total
Ease of remittances						
No response		54.3	50.4	27.9	23.5	34.8
No impact		18.5	17.4	25.5	28.2	23.3
Somewhat		18.5	24.2	34	24.7	29.9
Very much		8.7	8	12.6	23.5	12
Reduction in transaction time of deals						
No response		56.5	49.6	25.3	20	32.9
No impact		14.1	10.6	10.3	11.8	10.8
Somewhat		21.7	26.9	45.3	42.4	39.1
Very much		7.6	12.9	19	25.9	17.3
Helpful in crop management						
No response		63	63.3	54.1	64.7	57.6
No impact		21.7	15.2	17.1	22.4	17.4
Somewhat		9.8	12.9	21.9	8.2	17.9
Very much		5.4	8.7	6.8	4.7	7
Helpful in livestock management						
No response		63	62.9	56.3	65.9	59
No impact		20.7	18.6	18.6	21.2	19
Somewhat		13	12.1	19.3	11.8	16.7
Very much		3.3	6.4	5.8	1.2	5.4
Total	Percent	100	100	100	100	100
	Number	92	264	730	85	1171

Annex Table - 5.13
Mobile Phone made Impact on different Benefits of Life by Income level, Pakistan, 2008

(Percent)

Impact of Mobile		Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total
Ease of remittances						
No response		10.9	7.6	8.5	17.6	9.1
No impact		28.3	20.5	24	27.1	23.7
Somewhat		30.4	48.9	48.9	29.4	46
Very much		30.4	23.1	18.6	25.9	21.1
Reduction in transaction time of deals						
No response		7.6	4.2	5.8	16.5	6.3
No impact		14.1	12.1	10.4	7.1	10.8
Somewhat		48.9	51.9	55.1	44.7	53.1
Very much		29.3	31.8	28.8	31.8	29.7
Helpful in crop management						
No response		27.2	32.6	42.1	60	40.1
No impact		31.5	25	21.4	18.8	22.8
Somewhat		27.2	24.2	25.9	15.3	24.9
Very much		14.1	18.2	10.7	5.9	12.3
Helpful in livestock management						
No response		31.5	33.3	46.4	62.4	43.5
No impact		31.5	28.4	23.4	20	24.9
Somewhat		22.8	20.8	20.7	12.9	20.3
Very much		14.1	17.4	9.5	4.7	11.3
Total	Percent	100	100	100	100	100
	Number	92	264	730	85	1171

Annex Table - 5.14
Internet made Impact on different Benefits of Life by Income level, Pakistan, 2008

(Percent)

Impact of Internet		Up to Rs.5000	Rs.5001-10000	Rs.10001+	No Response	Total
Ease of remittances						
No response		69.6	67.4	52.6	38.8	56.3
No impact		14.1	20.5	25.6	28.2	23.7
Somewhat		14.1	8	13.3	16.5	12.4
Very much		2.2	4.2	8.5	16.5	7.6
Reduction in transaction time of deals						
No response		69.6	68.2	53.3	36.5	56.7
No impact		9.8	14.8	22.2	17.6	19.2
Somewhat		16.3	11	15.1	22.4	14.8
Very much		4.3	6.1	9.5	23.5	9.3
Helpful in crop management						
No response		72.8	73.9	70.4	70.6	71.4
No impact		17.4	16.3	19.7	22.4	19
Somewhat		4.3	6.4	7.4	5.9	6.8
Very much		5.4	3.4	2.5	1.2	2.8
Helpful in livestock management						
No response		72.8	74.2	71.5	71.8	72.2
No impact		16.3	17	18.4	20	18
Somewhat		6.5	5.3	7.7	7.1	7
Very much		4.3	3.4	2.5	1.2	2.7
Total	Percent	100	100	100	100	100
	Number	92	264	730	85	1171

Annex Table - 5.15
Respondents reporting Impact Assessment of Competition in LDI and Calling Cards by Income level, Pakistan, 2008

(Percent)

Impact assessment	Up to Rs.5000	Rs.5001-10000	Rs.10001+	Not Responded	Total
Increased business through overseas contact					
No effect	87	84.5	79	64.7	79.8
Somewhat	10.9	13.3	16	23.5	15.5
Very much	2.2	2.3	4.9	11.8	4.6
Increased family contact at national and International level					
No effect	81.5	79.2	69.2	63.5	72
Somewhat	9.8	13.3	17.8	24.7	16.7
Very much	8.7	7.6	13	11.8	11.4

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Reduction in business travel						
No effect		82.6	83	72.1	65.9	74.9
Somewhat		10.9	11.4	18.8	23.5	16.8
Very much		6.5	5.7	9.2	10.6	8.3
Reduction in expenditure on telecom						
No effect		85.9	84.5	74.4	70.6	77.3
Somewhat		9.8	12.1	19.5	22.4	17.3
Very much		4.3	3.4	6.2	7.1	5.5
Total	Percent	100	100	100	100	100
	Number	92	264	730	85	1171

Annex Table 7.1
Direct Employment Projections, Telecommunication Sector, Pakistan, 2008/09 – 2017/18

Service / Year	FLL	WLL	Mobile Phone	Internet Broad-band	LDI	Pay Phones	VTS	Call Centers	Net Café	Tele Centers	Direct Employment Grand Total
2008-09	38300	1683	20577	12920	11387	249259	1100	1500	3000	1000	340726
2009-10	35000	1683	23826	15050	11400	261571	1300	1600	3100	1500	356030
2010-11	34000	1683	25342	17200	11400	273733	1560	1700	3300	2000	371918
2011-12	33000	1683	26426	19700	11400	286193	1800	1800	3600	2500	388102
2012-13	32000	1700	27076	22100	11400	298505	2160	1900	4000	3250	404091
2013-14	31000	1700	27764	24250	11400	310817	2590	2000	4500	4250	420271
2014-15	30000	1700	28388	26450	11400	321329	3110	2100	5100	5500	435077
2015-16	29000	1700	29012	28550	11400	347692	3730	2200	5800	7000	466084
2016-17	28000	1700	29571	30820	11400	347754	4476	2300	6600	8750	471371
2017-18	27000	1700	30000	33050	11400	360000	4900	2400	7500	10750	488700

Source: TEACH Research

Annex Table 7.2
Indirect Employment Projection Telecommunication sector, Pakistan, 2008/09 – 2017/18

Indirect Employment	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
FLL	5,340	5,640	5,925	6,210	6,495	6,780	7,015	7,200	7435	7,670
WLL	8678	9444	10210	10770	11320	11790	12248	12706	13164	13520
Mobile	371,237	410,443	443,243	474,500	504,085	533,251	561,708	589,255	616,703	640,428
LDI	540	550	570	600	620	630	660	670	690	710

Source: TEACH Research

Annex Table 7.3
Induced Employment Projections in Telecommunication Sector, Pakistan, 2008/09 – 2017/18

Service/Year	FLL	WLL	Mobile Phone	Internet / Broad-band	LDI	Induced Employment Total
2008-09	69824	16578	626902	20672	19083	753059
2009-10	65024	17803	694830	24080	19120	820858
2010-11	63880	19029	749736	27520	19152	879317
2011-12	62736	19925	801482	31520	19200	934862
2012-13	61592	20832	849858	35360	19232	986874
2013-14	60448	21584	897624	38800	19251	1037707
2014-15	59224	22317	944154	42320	19296	1087310
2015-16	57920	23050	989227	45680	19312	1135189
2016-17	56696	23782	1034038	48352	19344	1182213
2017-18	55472	24352	1072685	51280	19376	1223165

Source: TEACH Research

Annex Table 7.4
Employment Projections in Fixed Local Loop (FLL), Pakistan, 2008/09 -2017/18

Service/Year	Direct Employment	Indirect Employment				Total Indirect	Total Direct+ Indirect	Induced = B*1.6	Grand Total =(B+C)
	FLL operators	Vendors	Contract Companies	Security Guards	Outside Plant Contractor				
2008-09	38,300	140	450	4,000	750	5,340	43,640	69,824	113,464
2009-10	35,000	140	450	4,250	800	5,640	40,640	65,024	105,664
2010-11	34,000	140	460	4,500	825	5,925	39,925	63880	103,805
2011-12	33,000	140	470	4,750	850	6,210	39,210	62,736	101,946
2012-13	32,000	140	480	5,000	875	6,495	38,495	61592	100,087
2013-14	31,000	140	490	5,250	900	6,780	37,780	60,448	98,228
2014-15	30,000	140	500	5,450	925	7,015	37,015	59,224	96,239
2015-16	29,000	140	510	5,600	950	7,200	36,200	57,920	93,490
2016-17	28,000	140	520	5,800	975	7435	35435	56,696	92131
2017-18	27,000	140	530	6000	1,000	7,670	34670	55,472	90142

Source: TEACH Research

Annex Table 7.5
Projections in Wireless Local Loop (WLL), Pakistan, 2008/09 -2017/18

Service /Year	Direct Employees	Indirect Employees					Direct	Indirect	Total Direct + Indirect	Induced = B*1.6	Grand Total (B + C)
	WLL operators	Vendors	Security Cell Sites (2470)	Tower Installation and service companies	WLL Outlets	Tower Designers					
2008-09	1,683	600	5,558	500	2,000	20	1,683	8678	10,361	16578	26,939
2009-10	1,683	600	6,174	650	2,000	20	1,683	9444	11,127	17803	28,930
2010-11	1,683	600	6,790	800	2,000	20	1,683	10210	11,893	19029	30,922
2011-12	1,683	600	7,200	950	2,000	20	1,683	10770	12,453	19925	32,378
2012-13	1,700	600	7,600	1100	2,000	20	1,700	11320	13,020	20832	33,852
2013-14	1,700	600	7,920	1250	2,000	20	1,700	11790	13,490	21584	35,074
2014-15	1,700	600	8,228	1400	2,000	20	1,700	12248	13,948	22317	36,265
2015-16	1,700	600	8,536	1550	2,000	20	1,700	12706	14,406	23050	37,456
2016-17	1,700	600	8,844	1700	2,000	20	1,700	13164	14,864	23782	38,646
2017-18	1,700	600	9,050	1850	2,000	20	1,700	13520	15,220	24352	39,572

Source: TEACH Research

Annex Table 7.6
Employment Projections in Mobile phone, Pakistan, 2008/09-2017/18

Mobile	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
Direct Employment										
CMOs	20577	23826	25342	26426	27076	27764	28388	29012	29571	30000
Indirect Employment										
Vendors of Equipments	7,500	8,000	8,500	9,000	9,500	10,000	10,500	11,000	11,500	12,000
Tower Designers	220	230	240	250	260	270	280	290	300	300
Tower Manufacturers	600	650	700	750	800	850	900	950	1000	1050
Tower Installation Companies	7500	8000	8500	9000	9300	9500	9600	9700	9800	9850
Subcontractor	1300	1400	1500	1600	1650	1700	1750	1800	1850	1900
Franchise holders	18263	21447	22491	23450	24199	24815	25368	25921	26425	27300
Cellular Shops	260000	285000	310000	335000	360000	385000	410000	435000	460000	480000
Free lance card sellers	26090	30210	32130	33500	34570	35450	36240	37030	37750	39000
Tower Security	48864	54546	58182	60910	62726	64546	65910	66364	66818	67728
Service Companies	400	440	460	480	500	520	540	560	600	620
Consulting Companies	500	520	540	560	580	600	620	640	660	680
Total Indirect	371237	410443	443243	474500	504085	533251	561708	589255	616703	640428
Total Direct + Indirect	391814	434269	468585	500926	531161	561015	590096	618267	646274	670428
Induced =B*1.6	626902	694830	749736	801482	849858	897624	944154	989227	1034038	1072685
Grand Total= (B+C)	1018716	1129099	1218321	1302408	1381019	1458639	1534250	1607494	1680312	1743113

Source: TEACH Research

Annex Table - 7.7
Employment Projections in Internet and Broadband, Pakistan, 2008/09-2017/18

Service/Year	Direct Employment		Total Direct	Induced (A*1.6)	Grand Total (A+B)
	ISP / Internet	Broadband			
2008-2009	7,920	5,000	12,920	20,672	33,592
2009-2010	8,450	6,600	15,050	24,080	39,130
2010-2011	8,850	8,350	17,200	27,520	44,720
2011-2012	9,750	99,50	19,700	31,520	51,220
2012-2013	10,500	11,600	22,100	35,360	57,460
2013-2014	11,000	13,250	24,250	38,800	63,050
2014-2015	11,550	14,900	26,450	42,320	68,770
2015-2016	12,000	16,550	28,550	45,680	74,230
2016-2017	12,600	18,220	30,820	49,312	80,132
2017-2018	13,050	20,000	33,050	52,880	85,930

Source: TEACH Research

Annex Table - 7.8
Employment Projections in Long Distance and International (LDI), Pakistan, 2008/09-2017/18

Service/Year	Direct Employment	Indirect Employment				Total Indirect	Total Direct + Indirect	Induced = B*1.6	Grand Total (B+C)
	Direct LDI Companies	Vendor for equipment	Outsource Contractors	Service Companies	Consulting Companies				
2008-2009	11,387	250	200	60	30	540	11927	19083	31010
2009-2010	11,400	260	200	60	30	550	11950	19120	31070
2010-2011	11,400	270	200	60	40	570	11970	19152	31122
2011-2012	11,400	280	210	60	50	600	12000	19200	31170
2012-2013	11,400	280	220	60	60	620	12020	19232	31252
2013-2014	11,400	280	220	60	70	630	12030	19251	31281
2014-2015	11,400	290	230	60	80	660	12060	19296	31356
2015-2016	11,400	290	240	60	80	670	12070	19312	31382
2016-2017	11,400	290	250	60	90	690	12090	19344	31434
2017-2018	11,400	290	260	60	100	710	12110	19376	31486

Source: TEACH Research

Annex Table 7 .9
Yearly Employment Projections in Payphones, Pakistan, 2008/09 -2017/18

Service/Year	Direct Employment	Total Direct	Grand Total
	Pay phone		
2008-09	249259	249259	249259
2009-10	261571	261571	261571
2010-11	273733	273733	273733
2011-12	286193	286193	286193
2012-13	298505	298505	298505
2013-14	310817	310817	310817
2014-15	321329	321329	321329
2015-16	347692	347692	347692
2016-17	347754	347754	347754
2017-18	360000	360000	360000

Source: TEACH Research

Annex Table 7.10
Employment Projections in Vehicle Tracking System, Pakistan, 2008/09 -2017/18

VTS	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Direct Employment										
VTS	1,100	1,300	1,560	1,800	2,160	2,590	3,110	3,730	4,476	4,900
Total Direct	1,100	1,300	1,560	1,800	2,160	2,590	3,110	3,730	4,476	4,900
Grand Total	1,100	1,300	1,560	1,800	2,160	2,590	3,110	3,730	4,476	4,900

Source: TEACH Research

Annex Table 7.11
Employment Projections, Call Centres Pakistan, 2008/09 -2017/18

Call Centers	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Direct Employment										
Call Centers	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400
Total Direct	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400
Grand Total	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400

Source: TEACH Research

Annex Table 7.12
Employment Projections, Net Cafes, Pakistan, 2008/09 -2017/18

Net cafes	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Direct Employment										
Net Cafes	3,000	3,100	3,300	3,600	4,000	4,500	5,100	5,800	6,600	7,500
Total Direct	3,000	3,100	3,300	3,600	4,000	4,500	5,100	5,800	6,600	7,500
Grand Total A	3,000	3,100	3,300	3,600	4,000	4,500	5,100	5,800	6,600	7,500

Source: TEACH Research

Annex Table 7.13
Employment Projections, Tele Centres, Pakistan, 2008/09 -2017/18

Tele centre	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Direct Employment										
Tele center	1,000	1,500	2,000	2,500	3,250	4,250	5,500	7,000	8,750	10,750
Total Direct	1000	1500	2000	2500	3250	4250	5500	7000	8750	10750
Grand Total	1000	1500	2000	2500	3250	4250	5500	7000	8750	10750

Source: TEACH Research

Annex Table 7.14
Employment Projections in Telecommunication Sector, Pakistan, 2008/09 – 2017/18

Service / Year	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
FLL	113464	105664	103805	101946	100087	98228	96239	93490	92131	90142
WLL	26939	28930	30922	32378	33852	35074	36265	37456	38646	39572
Mobile	1018716	1129099	1218321	1302408	1381019	1458639	1534250	1607494	1680312	1743113
Internet / Broadband	33592	39130	44720	51220	57460	63050	68770	74230	80132	85930
LDI	31010	31070	31122	31170	31252	31281	31356	31382	31434	31486
Pay Phones	249259	261571	273733	286193	298505	310817	321329	347692	347754	360000
VTS	1100	1300	1560	1800	2160	2590	3110	3730	4476	4900

Call Centers	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
Net Café	3000	3100	3300	3600	4000	4500	5100	5800	6600	7500
Tele Centers	1000	1500	2000	2,500	3,250	4,250	5,500	7,000	8,750	10750
Employ-ment										
Grand Total	1479580	1602965	1711183	1815014	1913485	2010429	2104018	2210474	2292536	2375793

Source: TEACH Research

Volume-II

Annex Table-1.1
Number of respondents by Residence and Region, Pakistan, 2008

(Percent)

Region	Urban	Rural	Total
Punjab	60.3	47.9	56.0
Sindh	23.6	14.6	20.4
Balochistan	6.9	6.9	6.9
NWFP	8.0	26.9	14.6
AJK / FANA	1.2	3.7	2.1
Total	100	100	100

Annex Table - 1.2
Age Distribution of Respondents by Residence and Region, Pakistan, 2008

(Percent)

Background characteristics	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Urban	Rural	Total
Gender								
Males	72	76	85.1	91.5	76.1	73.7	82.3	76.7
Females	28	24	14.9	8.5	23.9	26.3	17.7	23.3
Age group (Year)								
< 20	14.7	7.7	14.9	9.4	15.6	13.9	10.1	12.5
20 - 39	57.6	66	62	50.4	48.6	58.3	58.4	58.3
40 - 59	18.8	19.5	11.6	27.5	12.8	19.5	19.8	19.6
60 +	8.9	6.8	11.5	12.7	22.9	8.4	11.7	9.5
Age group								
< 20	14.7	7.7	14.9	9.4	15.6	13.9	10.1	12.5
20 - 24	17.9	18.5	22.3	9.9	15.6	17.7	16	17.1
25 - 29	16.7	16.6	17.1	13.2	16.5	16.3	16	16.2
30 - 34	12.6	17.8	14.2	13.9	12.8	13.8	14.4	14
35 - 39	10.4	13.1	8.3	13.4	3.7	10.6	12	11.1
40 - 44	8.6	9.9	7	13.7	5.5	9.2	10	9.5
45 - 49	5.6	4.9	3.8	7.1	4.6	5.8	5	5.5
50 - 54	3	2.7	0.4	4.6	2.3	2.9	3	3
55 - 59	1.7	1.9	0.4	2	0.5	1.6	1.7	1.6
60 - 64	0.8	1.2	0.4	1.3	-	0.9	1	0.9

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65 - 69	0.4	0.6		0.2	-	0.5	0.3	0.4
70 +	7.7	5	11.1	11.2	22.9	7.1	10.4	8.2
Age group								
< 20	14.7	7.7	14.9	9.4	15.6	13.9	10.1	12.5
20 - 29	34.5	35.1	39.4	23.1	32.1	33.9	32	33.3
30 - 39	23	30.9	22.6	27.3	16.5	24.4	26.4	25.1
40 - 49	14.2	14.9	10.8	20.8	10.1	14.9	15.1	15
50 - 59	4.6	4.6	0.8	6.6	2.8	4.5	4.8	4.6
60 +	8.9	6.8	11.5	12.7	22.9	8.4	11.7	9.5
Total								
Percent	100	100	100	100	100	65.1	34.9	100
Number	5937	2168	731	1550	218	6906	3698	10604
Age of respondent								
Mean	35.5	34.7	35.7	40.8	44.6	35.2	38.4	36.3
Median	30	30.5	28	35	31	30	32	30

Annex Table - 1.3
Age Distribution of Respondents by Sex, Pakistan, 2008

(Percent)

Age groups (Year)	Males		Females		Total	
	Percent	Number	Percent	Number	Percent	Number
Age group						
< 20	67.6	899	32.4	431	100	1330
20 – 39	74	4580	26	1607	100	6187
40 – 59	88.7	1843	11.3	234	100	2077
60 +	79.9	807	20.1	203	100	1010
Age group						
< 20	67.6	899	32.4	431	100	1330
20 – 24	64.4	1168	35.6	646	100	1814
25 – 29	75	1285	25	429	100	1714
30 – 34	78	1159	22	326	100	1485
35 – 39	82.5	968	17.5	206	100	1174
40 – 44	88.8	891	11.2	112	100	1003
45 – 49	86.7	507	13.3	78	100	585
50 – 54	91.1	287	8.9	28	100	315
55 – 59	90.8	158	9.2	16	100	174
60 – 64	83.2	79	16.8	16	100	95
65 – 69	83.3	35	16.7	7	100	42
70 +	79.4	693	20.6	180	100	873
Age group						
< 20	11.1		17.4		12.5	
20 – 29	30.1		43.4		33.3	
30 – 39	26.2		21.5		25.1	
40 – 49	17.2		7.7		15.0	

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50 – 59	5.5	1.8	4.6
60 +	9.9	8.2	9.5
Total	100	100	100
Mean age	**37.6**	**32.2**	**36.3**
Median age	**32**	**26**	**30**

Annex Table - 1.4
Knowledge about Telecommunication Services / Gadgets by Residence and Region, Pakistan, 2008
(Percent)

Type of Telecom Services / Gadgets	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Urban	Rural	Total	
								Percent	Number
FLL	86.6	82.1	89.7	89.4	80.7	86.6	85.3	86.2	9137
WLL	48.1	40.4	59.8	48.1	21.6	48.7	43.1	46.8	4960
Mobile phone	87.9	93.1	91.1	87.8	89	90.1	87.6	89.2	9461
SMS	58	69.7	56.6	65	49.5	64.1	55.7	61.2	6485
MMS	27.5	36.5	18.6	28.4	11	33.3	19.7	28.5	3026
WiMax/Broadband	12.3	12.4	5.6	11.9	6.9	14.8	6	11.7	1241
PC	40.2	44.6	45.8	49.9	45.4	47.6	34.6	43	4562
Internet	57	71.8	68.3	52.8	61	65.2	51.1	60.3	6389
Calling cards	51.5	37.4	42.1	59.2	28.9	51.2	44	48.7	5160
PCO/ Payphone	67.4	71.7	75	62	36.7	68.3	65.7	67.4	7145
Fax	29.3	22.7	28	35.2	24.3	32.3	21.8	28.6	3036
Car tracker	14.8	14.6	5.5	6.7	7.3	16.2	6.5	12.8	1357

Annex Table - 1.5
Knowledge about Telecommunication Services / Gadgets by Sex, Pakistan, 2008

(Percent)

Type of Telecom services / Gadgets	Male	Female	Total	
			Percent	Number
FLL	86.4	85.5	86.2	9137
WLL	49.1	39.0	46.8	4960
Mobile	89.4	88.5	89.2	9461
SMS	60.8	62.2	61.2	6485
MMS	28.1	29.9	28.5	3026
WiMax /Broadband	12.2	10.0	11.7	1241
PC	42.9	43.4	43	4562
Internet	61.1	57.5	60.3	6389
Calling Cards	49.7	45.2	48.7	5160
PCO/ Payphone	69.4	60.7	67.4	7145
Fax	30.2	23.4	28.6	3036
Car tracker	13.6	10.1	12.8	1357

Annex Table - 1.6
Use of Telecommunication Services/Gadgets, by Residence and Region, Pakistan, 2008

(Percent)

Type of Telecom services / Gadgets	Punjab	Sindh	Balochistan	NWFP	AJK/FANA	Urban	Rural	Total	
								Percent	Number
FLL	74.3	67.2	72	78.1	66.5	75.4	68.8	73.1	7750
WLL	31.2	18.1	28.6	18.6	9.2	28	22.3	26.1	2763
Mobile	80.7	88.7	81.7	71	80.7	84	75.3	81	8588
SMS	43.9	56.1	39.9	44	23.9	50.4	37	45.7	4848
MMS	19.4	25.1	10.3	17.1	10.1	23.2	12.2	19.4	2056
WiMax/ Broadband	4.2	3.4	2.3	5.2	3.2	5.1	1.9	4	425
PC	21.3	29.9	25.3	26.9	24.3	27.5	18	24.2	2566
Internet	49.1	61.8	60.3	37.2	45.4	56.1	40.5	50.6	5368
Calling cards	32.5	19	18.3	28.6	12.8	29.9	23.9	27.8	2947
PCO/ Payphones	60.7	61.8	61.3	31.9	25.2	59.2	50.1	56	5942
Fax	13.3	10.2	8.2	11.5	12.4	14.6	7.4	12.1	1278

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Car tracker	6.5	4.1	1.8	2.7	3.7	6.4	2.7	5.1	539
At least one service	97.8	99	98.4	97.4	96.8	98	97.9	98	10393

Annex Table - 1.7
Use of Telecommunication Services/Gadgets, by Sex, Pakistan, 2008

(Percent)

Type of Telecom services / Gadgets	Males	Females	Total	
			Percent	Number
FLL	72.3	75.6	73.1	7750
WLL	27.1	22.6	26.1	2763
Mobile	80.7	81.9	81	8588
SMS	45.3	47.1	45.7	4848
MMS	18.4	22.5	19.4	2056
WiMax/ Broadband	4.1	3.8	4	425
PC	23.9	25.1	24.2	2566
Internet	50.9	49.8	50.6	5368
Calling cards	28.0	27.2	27.8	2947
PCO/ Payphones	57.3	51.8	56	5942
Fax	13.2	8.3	12.1	1278
Car tracker	5.2	4.6	5.1	539
At least one service	98.1	97.6	98	10393

Annex Table - 1.8
Telecommunication Services/Gadgets Owned by Respondents by Residence and Region, Pakistan, 2008

(Percent)

Type of Telecom services / Gadgets	Punjab	Sindh	Baloch-istan	NWFP	AJK/ FANA	Urban	Rural	Total	
								Percent	Number
FLL	60.1	46.4	49.9	68.8	43.1	59.8	53.4	57.6	6103
WLL	20.4	12.4	17.1	13.5	9.6	18.7	14.6	17.3	1833
Mobile	74.8	82.6	71.4	65.6	81.7	78.4	68.6	75	7949
WiMax / Broadband	2.5	1.2	1.8	4.4	3.2	3	1.5	2.5	263
PC	16.4	23.7	20.4	24.7	20.2	22.3	14	19.4	2062
Internet	22.8	22.5	18.2	25.4	18.3	26.9	14.8	22.7	2404
Fax	7.3	5.6	2.5	3.8	3.2	7.6	2.9	6	637
Car tracker	4.8	3	1.2	1	1.4	4.8	1.2	3.6	377
At least one own service	93.5	95	90.4	94.1	95.4	94.8	91.7	93.7	9936

Annex Table - 1.9
Telecommunication Services/Gadgets Owned by Respondents, by Sex, Pakistan, 2008

(Percent)

Telecom services / gadgets	Males	Females	Total	
			Percent	Number
FLL	57.8	57.8	57.6	6103
WLL	18.1	14.7	17.3	1833
Mobile	74.7	76	75	7949
WiMax / Broadband	2.5	2.5	2.5	263
PC	19.5	19.3	19.4	2062
Internet	22.9	21.8	22.7	2404
Fax	6.4	4.7	6	637
Car tracker	3.6	3.5	3.6	377
At least one service own	93.4	94.8	93.7	9936

Annex Table - 1.10
Reasons for not having FLL / WLL by Residence and Region, Pakistan, 2008

(Percent)

Reasons	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Urban	Rural	Total	
								Percent	Number
Facility not available	8.9	10.8	10	5.1	16.1	9.1	8.7	8.9	949
Cannot afford	15	23.8	17	9.3	19.3	15.3	17.9	16.2	1719
Have no use of it	2.7	4.2	1.8	2.1	2.8	3.2	2.3	2.9	305
Find it complicated	4	4.7	1.8	2	4.1	4	3.1	3.7	389

Annex Table - 1.11
Reasons for not having FLL/WLL by Sex, Pakistan, 2008

(Percent)

Reasons	Males	Females	Total	
			Percent	Number
Facility not available	8.7	9.9	8.9	949
Cannot afford	16.6	14.9	16.2	1719
Have no use of it	2.6	3.8	2.9	305
Find it complicated	3.5	4.1	3.7	389

Annex Table – 1.12
Reasons for not having Mobile phone by Residence and Region, Pakistan, 2008

(Percent)

Reasons	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Urban	Rural	Total	
								Percent	Number
Facility not available	4.1	6.4	2.5	15.3	2.8	4.2	9.5	6.1	644
Cannot afford	9.1	6.6	11.1	5.2	3.2	7.2	9.5	8	850
Have no use of it	3.8	2.3	4.4	2.9	2.8	3.3	3.6	3.4	361
Find it complicated	2.8	2.3	1.5	1.4	2.3	2.6	1.9	2.4	251

Annex Table - 1.13
Reasons for not having Mobile Phone by Sex, Pakistan, 2008

(Percent)

Reasons	Males	Females	Total	
			Percent	Number
Facility not available	6.8	3.8	6.1	644
Cannot afford	8.3	6.9	8	850
Have no use of it	3.2	4.1	3.4	361
Find it complicated	2.4	2.3	2.4	251

Annex Table - 1.14
Reasons for not having Internet by Residence and Region, Pakistan, 2008

(Percent)

Reasons	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Urban	Rural	Total	
								Percent	Number
Facility not available	12.1	12.9	11.2	12.2	14.2	10.1	16.2	12.3	1300
Cannot afford	20.4	20.6	21.2	22.6	15.1	17.5	26.6	20.7	2194
Have no use of it	14	16.1	11.5	17	7.8	12.5	18.5	14.6	1546
Find it complicated	10	8.1	4.2	7.5	8.7	9	8.5	8.8	936

Annex Table - 1.15
Reasons for not having Internet by Sex, Pakistan, 2008

(Percent)

Reasons	Males	Females	Total	
			Percent	Number
Facility not available	12.2	12.6	12.3	1300
Cannot afford	22.0	16.4	20.7	2194
Have no use of it	14.9	13.4	14.6	1546
Find it complicated	8.7	9.4	8.8	936

Annex Table - 1.16
Place where Phone Facility used by Residence and Region, Pakistan, 2008

(Percent)

Place of use	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Urban	Rural	Total	
								Percent	Number
PCO / Payphone	56.4	58.7	60.1	42.6	48.6	55.6	53.7	54.9	5826
Neighbours	11.6	11.9	7.7	8.6	17.4	11.8	9.7	11	1171
Relatives / friends	15.3	19.1	9.3	9.9	14.2	15.7	13.2	14.8	1574
Office	6.5	10.1	2.6	5.7	4.6	8.5	3.8	6.8	724
Phone facility	74.3	67.2	72	78.1	66.5	75.4	68.8	73.1	7750

Annex Table - 1.17
Place where Phone Facility used by Sex, Pakistan, 2008

(Percent)

Place	Males	Females	Total	
			Percent	Number
PCO / Payphone	54.9	55	54.9	5826
Neighbours	10.6	12.4	11	1171
Relatives / friends	14.6	15.6	14.8	1574
Office	7.6	4.2	6.8	724
Phone facility	72.3	75.6	73.1	7750

Annex Table - 1.18
Place where Internet Facility used by Residence and Region, Pakistan, 2008

(Percent)

Place of use	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Urban	Rural	Total	
								Percent	Number
At office	12.3	11.1	7.4	6.3	6.4	13.4	5.7	10.7	1134
Neighbours	5.3	6	4.8	5.3	2.8	5.5	4.9	5.3	565
Friend / relative	11.7	12.3	6.6	11.8	15.6	11.9	11	11.6	1227
Educational institutions	10.9	16.8	15.7	7	4.6	13	9.4	11.8	1247
Net cafe	32	36.3	36.1	26.4	24.8	34.6	27.6	32.2	3413
Internet facility	49.1	61.8	60.3	37.2	45.4	56.1	40.5	50.6	5368

Annex Table - 1.19
Place where Internet Facility used by Sex, Pakistan, 2008

(Percent)

Place of use	Males	Females	Total	
			Percent	Number
At office	10.7	10.7	10.7	1134
Neighbours	5.1	6	5.3	565
Friends / relatives	10.6	14.7	11.6	1227
Educational institutions	10	17.5	11.8	1247
Net cafe	34.9	23.2	32.2	3413
Internet facility	50.9	49.8	50.6	5368

Annex Table - 1.20
Facilities would like to be owned in Future by Residence and Region, Pakistan, 2008

(Percent)

Facilities owned in future	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Urban	Rural	Total	
								Percent	Number
FLL	21.6	20.5	31.9	31.2	37.6	20	31.1	23.8	2529
WLL	14.5	15.7	20.8	23.1	8.7	14	20.6	16.3	1728
Mobile phone	34.2	44.2	38	51.8	19.7	35.1	45.8	38.8	4114
WiMax / Broadband	15.7	11	6	25	5	16.8	12.4	15.2	1616

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PC	18.6	28	23.8	29.4	13.8	21.5	23.9	22.4	2370
Internet	28.3	36.5	33.7	34.8	23.4	32.5	28.8	31.2	3306
Fax	11.9	21.8	11.4	12.7	13.8	14.7	12.7	14	1489
Car tracker	8.2	9.1	5.6	5.3	10.1	9.6	4.6	7.8	832
Other	2.2	1.5	2.1	3.3	4.1	2.4	2	2.2	236

Annex Table - 1.21
Facility would like to owned in Future by Sex, Pakistan, 2008

(Percent)

Facilities owned in future	Males	Females	Total	
			Percent	Number
FLL	24.7	21	23.8	2529
WLL	17.2	13.3	16.3	1728
Mobile	39.2	37.6	38.8	4114
WiMax / Broadband	15.7	13.7	15.2	1616
PC	22.5	21.9	22.4	2370
Internet	31.5	30.2	31.2	3306
Fax	13.7	15	14	1489
Car tracker	8.4	6.1	7.8	832
Other	2.2	2.3	2.2	236

Annex Table - 1.22
Benefits of FLL / WLL by Residence and Region, Pakistan, 2008

(Percent)

Types of Benefits	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Urban	Rural	Total	
								Percent	Number
Social / Cultural	66.1	41.9	53.2	64.1	65.1	60.2	59.6	60	6361
General interaction	77.4	50.4	64.8	78.1	72	71.1	70.8	71	7527
Business / Trade	68.4	37.1	52	63.3	61	59.4	61.1	60	6361
Employment/work	62	33.8	43.9	61.8	54.1	54.2	55.8	54.8	5808
Farm management	48.6	20.9	27.2	48.6	45.9	38.5	46.8	41.4	4390
Savings	50.5	28.6	34.6	42.5	37.2	44.7	41.3	43.5	4612
Family cohesion	64.9	39.7	55.7	69	63.8	60.5	58.1	59.7	6327
Health / Medical	56.3	28	41	64	58.3	48.6	54.4	50.6	5368
Education	53.6	24.8	28.5	52.6	55	45.1	47.2	45.9	4862
News/sports updates	48.4	19	21.1	35.5	48.2	38.4	38.9	38.6	4094

Annex Table - 1.23
Benefits of FLL / WLL by Sex, Pakistan, 2008

(Percent)

Benefits	Males	Females	Total	
			Percent	Number
Social / cultural	59.9	60.3	60	6361
General interaction	70.1	73.9	71	7527
Business / trade	60.9	57	60	6361
Employment / work	54.9	54.4	54.8	5808
Farm management	41.9	39.7	41.4	4390
Savings	43.7	42.9	43.5	4612
Family cohesion	58.6	63	59.7	6327
Health / medical	50.6	50.8	50.6	5368
Education	45.6	46.7	45.9	4862
News / sports updates	38.6	38.7	38.6	4094

Annex Table - 1.24
Benefits of Mobile Phone by Residence and Region, Pakistan, 2008

(Percent)

Types of Benefits	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Urban	Rural	Total	
								Percent	Number
Social / Cultural	69.4	64.4	58.1	49.8	66.1	65.9	62.4	64.7	6857
General interaction	83.8	75.2	77.7	65.7	81.2	80.6	75.9	78.9	8371
Business / Trade	73.7	58.6	58	54.5	68.8	66.8	66.4	66.6	7065
Employment / work	67.7	53.1	49.1	50.2	64.2	61.9	58.8	60.8	6449
Farm management	53.3	42	26.7	35.5	53.2	45.5	48.4	46.5	4935
Savings	53.2	37.8	28.5	35.2	42.2	45.5	45.4	45.5	4823
Family cohesion	67.7	61.2	56.2	54.6	61	64.9	61.1	63.6	6739
Health / Medical	61.1	44.4	46	52	57.3	54.8	56	55.2	5858
Education	59.3	31.6	36.7	43.4	57.8	50.9	47.7	49.7	5275
News / sports	59.4	23.7	29.5	39.1	65.1	47.5	46.6	47.2	5002

Annex Table - 1.25
Benefits of Mobile Phone by Sex, Pakistan, 2008

(Percent)

Benefits	Males	Females	Total	
			Percent	Number
Social / culture	64.3	66	64.7	6857
General interaction	78.3	80.9	78.9	8371
Business / trade	66.9	65.6	66.6	7065
Employment / work	60.4	62.1	60.8	6449
Farm management	46.7	45.9	46.5	4935
Savings	46.9	40.8	45.5	4823
Family cohesion	62.8	66.1	63.6	6739
Health / medical	54.8	56.6	55.2	5858
Education	49.3	51.1	49.7	5275
News / sports updates	47.3	46.6	47.2	5002

Annex Table - 1.26
Benefits of Internet by Residence and Region , Pakistan, 2008

(Percent)

Types of Benefits	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Urban	Rural	Total	
								Percent	Number
Social / Cultural	45.9	30.7	26.3	33.2	58.3	43.4	33.1	39.8	4221
General interaction	49.9	33.3	33.7	37	61.9	48.1	35.6	43.7	4639
Business / Trade	49.9	30.5	27.8	33.2	56	46.4	34	42.1	4463
Employment / work	47.8	29.8	32.7	36.3	54.1	46.6	32.2	41.5	4405
Farm management	33.5	17.1	20	24.5	47.2	30.1	24.6	28.2	2989
Savings	34.9	21.7	24.5	28.8	48.2	33.6	25.7	30.9	3272
Family cohesion	36.6	24.2	20.4	30.3	48.6	35.1	27	32.3	3423
Health / Medical	41.3	27.2	29	33	47.2	40.3	29.3	36.5	3867
Education	56.2	36.7	51.6	42.7	56.9	56.1	38.5	50	5297
News / sports	54.6	36.7	49.5	38.1	58.7	53.7	38.1	48.2	5116

Annex Table - 1.27
Benefits of Internet by Sex, Pakistan, 2008

(Percent)

Benefits	Males	Females	Total	
			Percent	Number
Social / culture	38.8	43.2	39.8	4221
General interaction	42.7	47.2	43.7	4639
Business / trade	41.8	43.1	42.1	4463
Employment / work	41.4	42	41.5	4405
Farm management	27.5	30.6	28.2	2989
Savings	30.8	31	30.9	3272
Family cohesion	31.2	35.8	32.3	3423
Health / medical	35.7	38.9	36.5	3867
Education	49.3	52.2	50	5297
News / sports updates	48	49	48.2	5116

Annex Table -2.1
Age group of Respondents by Region, Pakistan, 2008

(Percent)

Age Group (Years)	Punjab	Sindh	Baloch-istan	NWFP	AJK / FANA	Total
< 20	0.5	1.4	-	-	-	0.6
20 – 39	62.5	60.7	66.7	51.1	68.3	60.7
40 – 59	29.4	31.1	33.3	40.7	29.3	31.8
60+	7.4	6.8		8.2	2.4	6.8
No response	0.2	-	-	-	-	0.1
Total Percent	100	100	100	100	100	100
Number	605	280	63	182	41	1171

Annex Table - 2.2
Age group of Respondents by Sex, Pakistan, 2008

(Percent)

Age group (Years)		Males	Females	Total
Age group				
< 20		0.5	1.6	0.6
20 - 39		59.8	77.4	60.7
40 - 59		32.7	14.5	31.8
60 +		6.9	6.5	6.8
No response		0.1	-	0.1
Age group				
< 20		0.5	1.6	0.6
20 – 24		6.4	22.6	7.3
25 – 29		15.7	27.4	16.3
30 – 34		18	12.9	17.8
35 – 39		19.7	14.5	19.4
40 – 44		14.3	3.2	13.7
45 – 49		10.4	9.7	10.3
50 – 54		5.4	1.6	5.2
55 – 59		2.6	-	2.5
60 – 64		2.2	1.6	2.1
65 – 69		0.2	-	0.2
70 +		4.5	4.8	4.5
No response		0.1	-	0.1
Age group				
< 20		0.5	1.6	0.6
20 – 29		22.1	50	23.6
30 – 39		37.7	27.4	37.1
40 – 49		24.7	12.9	24.1
50 – 59		8	1.6	7.7
60 – 69		2.3	1.6	2.3
70 +		4.5	4.8	4.5
No response		0.1	-	0.1
Total	Percent	100	100	100
	Number	1109	62	1171
Mean		39.4	34.5	39.1
Median		36	29	36

Annex Table - 2.3
Major Educational Groups of Respondents by Region, Pakistan, 2008

(Percent)

Education		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Total
No education		4.8	8.2	17.5	12.6	7.3	7.6
Under Matric		19.8	17.5	34.9	12.6	26.8	19.2
Matric / Intermediate		37.7	38.9	25.4	33.5	22	36.1
Graduate and above		37.7	35.4	22.2	41.2	43.9	37.1
Total	Percent	100	100	100	100	100	100
	Number	605	280	63	182	41	1171

Annex Table - 2.4
Major Occupational Groups of Respondents by Region, Pakistan, 2008

(Percent)

Occupational Groups	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Total
Senior management	8.1	3.2	1.6	8.2	4.9	6.5
Junior or mid - level professionals	14.7	8.2	6.3	13.7	19.5	12.7
Business	48.8	68.2	69.8	54.9	56.1	55.8
Service related workers	9.1	9.6	12.7	6.6	9.8	9.1
Office workers	7.4	0.4	-	4.9	4.9	4.9
Skilled worker	2.6	0.7	-	0.5	-	1.6
Non-skilled worker	0.7	1.4	-	2.2	-	1
Farmers cultivators	2.1	5.7	7.9	3.8	2.4	3.6
Persons not working	6.4	1.8	1.6	4.9	2.4	4.7
No reported		0.7	-	-	-	0.2

Annex Table - 2.5
Use of Telecommunication Facility by Residence and Region, Pakistan, 2008

(Percent)

Type	Punjab	Sindh	Balochistan	NWFP	AJK/FANA	Rural	Urban	Total	
								Percent	Number
No use	0.7	1.1				0.3	0.7	0.6	7
Fixed Land Line (FLL)	56.4	43.2	61.9	75.8	58.5	47.9	60.2	56.6	663
Wireless Local Loop (WLL)	17	17.9	9.5	24.2	7.3	13.8	19.1	17.6	206
Mobile	95.7	90.7	96.8	98.4	100	92.6	96.1	95.1	1114
At-least one facility	99.3	98.9	100	100	100	99.7	99.3	99.4	1164

Annex Table - 2.6
Facility used if the respondent wants to phone someone by Residence and Region, Pakistan, 2008

(Percent)

Type	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
PCO / Payphone	35	77.9	7.9	73.6	56.1	51.5	50.2	50.6	592
Neighbours	5.6	4.3	1.6	9.3	7.3	8.2	4.7	5.7	67
Relatives / Friends	13.1	8.2	-	6.6	17.1	7.9	11.3	10.3	121
Office	23	8.9	-	11.5	12.2	13.2	17.4	16.2	190
At least one facility	99.3	98.9	100	100	100	99.7	99.3	99.4	1164

Annex Table - 2.7
Planning to have telecommunication services, if presently no connection available, by Residence and Region, Pakistan, 2008

(Percent)

Type	Punjab	Sindh	Balochistan	NWFP	AJK/FANA	Rural	Urban	Total	
								Percent	Number
No	8.9	26.4	-	4.9	4.9	14.1	11	11.9	139
FLL	7.3	7.1	-	25.8	14.6	12.1	9.1	10	117
WLL	7.1	11.1	-	14.3	7.3	9.1	8.7	8.8	103
Mobile	19.3	41.8	7.9	41.8	56.1	35	26.4	28.9	338
At-least one facility	99.3	98.9	100	100	100	99.7	99.3	99.4	1164

Annex Table - 2.8
Reasons for not having FLL/WLL in Future by Residence and Region, Pakistan, 2008

(Percent)

Reasons	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Facility not available	3.3	1.8	1.6	1.1	14.6	6.5	2.8	2.9	34
Cannot afford	6.6	13.2	9.5	9.3	-	12.1	11.6	8.5	100
Have no use of it	16.9	24.6	14.3	12.6	-	20	38.8	17.3	203
Find it complicated	0.2	0.7	-	5.5	-	0.3	2.8	1.1	13

Annex Table - 2.9
Reasons for not having Mobile in Future by Residence and Region, Pakistan, 2008

(Percent)

Reasons	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Facility not available	0.8	3.2	-	0.5	2.4	3.5	1.8	1.4	16
Cannot afford	2.6	2.5	1.6	1.1	-	3.8	3	2.2	26
Have no use of it	0.8	3.9	1.6	2.7	-	3.5	2.6	1.9	22
Find it complicated	0.5	0.4	-	-	-	0.9	0.1	0.3	4

Annex Table - 2.10
Reasons for not having Internet in Future by Residence and Region, Pakistan, 2008

(Percent)

Reasons	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Facility not available	3.6	3.2	6.3	3.3	9.8	8.2	6.1	3.8	45
Cannot afford	7.4	7.5	11.1	17.6	-	10.6	11.7	9	105
Have no use of it	34.2	42.5	36.5	33.5	7.3	42.6	80	35.3	413
Find it complicated	6.4	6.4	4.8	17.6	-	11.5	17.5	7.9	92

Annex Table - 2.11

Monthly Expenditure on Telecommunication Services by Residence and Region, Pakistan, 2008

(Percent)

Expenditure		Punjab	Sindh	Balochistan	NWFP	AJK/FANA	Rural	Urban	Total
FLL/WLL	Upto Rs. 250	6.7	21	33.3	12.9	28	14.2	12.5	12.9
	251 - 500	20.8	39.9	55.6	18.6	36	36.1	23.4	26.5
	501 - 1000	32.2	31.9	8.3	32.9	16	29	30.9	30.5
	1000 +	40.3	7.2	2.8	35.7	20	20.7	33.2	30.2
Mobile phone	Upto Rs. 250	8.6	22.8	21.1	11.2	14.6	18.2	10.9	13
	251 - 500	27.3	35.4	50.9	41.6	51.2	38.4	31.6	33.5
	501 - 1000	28.5	28	26.3	24.2	14.6	22.6	28.9	27.1
	1000 +	35.6	13.8	1.8	23	19.5	20.8	28.6	26.4
Internet	Upto Rs. 250	36.8	60.5	50	25.9	27.3	50.8	34.2	37.5
	251 - 500	20.1	27.9	50	35.8	54.5	20.3	30.3	28.3
	501 - 1000	19.4	9.3		27.2	18.2	16.9	19.7	19.1
	1000 +	23.6	2.3		11.1		11.9	15.8	15
Calling card	Upto Rs. 250	41.7	88.2	25	55.6	100	68.8	48.7	53.1
	251 - 500	36.7	11.8	25	22.2		15.6	30.1	26.9
	501 - 1000	15			11.1		12.5	10.6	11
	1000 +	6.7		50	11.1		3.1	10.6	9
Total	Percent	100	100	100	100	100	22.1	77.9	100
	Number	60	17	4	63	1	32	113	145

Annex Table - 2.12
Respondents Reporting Purpose for using FLL/WLL by Residence and Region , Pakistan, 2008

(Percent)

Purpose	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Business	50.2	46.8	31.7	66.5	31.7	39.4	54.8	50.3	589
Family matters	55.5	46.8	65.1	73.6	39	48.2	59.4	56.2	658
Social contact / work	48.9	38.2	41.3	66.5	19.5	40.3	50.7	47.7	558
News/sports	5.8	8.6	-	9.9	-	6.2	6.7	6.6	77
Education	17.4	13.6	3.2	41.8	2.4	17.6	19.5	19	222
Health / medical	26.4	20.4	11.1	70.3	4.9	27.6	31.3	30.2	354
Shopping	19.3	25.7	25.4	67.6	7.3	20.6	31.4	28.3	331
Office work	37.5	18.6	17.5	41.8	19.5	19.7	36.9	31.9	374
Farm management	9.8	6.4	9.5	28	-	15.3	9.9	11.4	134
Live Stock management	8.1	4.6	4.8	18.7	7.3	12.1	7.3	8.7	102

Annex Table - 2.13
Respondents Reporting Purpose for using Mobile Phone by Residence and Region, Pakistan, 2008

(Percent)

Purpose	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Business	77.5	81.8	90.5	76.9	58.5	74.7	80	78.5	919
Family matters	89.8	87.5	79.4	87.9	92.7	89.1	88.2	88.5	1036
Social contact / work	87.9	75.4	77.8	79.7	65.9	81.8	82.6	82.3	964
News/sports	16.7	17.5		56.6	12.2	15.9	24.5	22	258
Education	27.3	22.9	9.5	57.1	9.8	24.7	31.2	29.3	343
Health/medical	42.8	40	39.7	78.6	4.9	44.1	47.1	46.2	541
Shopping	38.8	42.9	71.4	73.6	12.2	45.3	46.3	46	539
Office work	53.9	28.2	41.3	41.8	26.8	35	48	44.2	518
Farm management	15	11.1	14.3	40.7	7.3	26.2	14.3	17.8	208
Live Stock management	11.7	8.6	7.9	31.9	4.9	20.3	11	13.7	160

Annex Table - 2.14
Respondents Reporting Purpose for using Internet Service by Residence and Region, Pakistan, 2008

(Percent)

Purpose	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Business	16.9	7.9	4.8	26.9	2.4	8.8	17.7	15.1	177
Family matters	4.6	8.2	1.6	20.3	2.4	5.6	8.5	7.7	90
Social contact/work	10.9	8.9	-	20.9	-	6.5	12.9	11	129
News/sports	15	10.4	4.8	32.4	19.5	12.9	17.6	16.2	190
Education	19.2	11.1	7.9	31.9	14.6	14.4	20.1	18.4	216
Health/medical	8.3	6.8	1.6	14.8	2.4	4.7	9.9	8.4	98

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Shopping	8.4	6.8	1.6	23.6		5.9	11.3	9.7	114
Office work	16.7	7.9	4.8	19.8	17.1	7.9	17.1	14.4	169
Farm management	1.8	2.1	-	7.7	-	0.9	3.4	2.6	31
Live Stock management	2	3.6	-	-	2.4	0.9	2.4	2	23

Annex Table - 2.15
Purpose for using PCO/Payphone by Residence and Region, Pakistan, 2008

(Percent)

Purpose	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Business	6.8	1.1	-	24.7	4.9	7.1	8.1	7.8	91
Family matters	5	0.7	-	29.7	19.5	6.8	8.5	8	94
Social contact/work	5.1	-	-	24.7	17.1	7.4	7	7.1	83
News/sports	0.2	-	-	12.1	-	0.3	2.6	2	23
Education	0.8	-	-	17	-	0.6	4.1	3.1	36
Health / medical	1.8	-	-	18.7	2.4	3.2	4.2	3.9	46
Shopping	2	0.4	1.6	15.9	-	2.4	4.2	3.7	43
Office work	3.1	-	1.6	11.5	-	2.1	4.1	3.5	41
Farm management	0.7	-	-	15.4	2.4	1.2	3.5	2.8	33
Live Stock management	1	-	-	13.2	-	1.5	3	2.6	30

Annex Table - 2.16
Problem Faced while using Telecom Services by Residence and Region, Pakistan, 2008

(Percent)

Problems faced	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Problem not reported	47.9	29.6	-	34.6	19.5	41.2	36.6	37.9	444
Slow Speed - internet	10.2	7.5	12.7	22	34.1	9.1	13.7	12.4	145
Frequent Disconnect - Internet	8.9	10	11.1	14.3	22	8.2	11.6	10.6	124

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Congestion/Line busy	18.7	33.2	28.6	17	19.5	16.2	25	22.5	263
Frequent Call Disconnection	22	36.1	61.9	15.9	39	22.9	28.9	27.2	318
Coverage problem (weak signals)	31.4	37.9	88.9	23.6	51.2	35	35.7	35.5	416
Helpline / Directory Assistance Problem	12.4	13.9	46	18.7	-	11.8	16.5	15.1	177
Billing problem	8.8	17.1	14.3	24.7	12.2	12.6	14.1	13.7	160
Others	1.7	1.8	1.6	6	-	1.2	2.8	2.3	27

Annex Table - 2.17
Telecom Services Impact on Time, Money efficiency by Residence and Region, Pakistan, 2008
(Percent)

Impact on	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Income increase								
No impact	19.8	16.4	14.3	16.5	48.8	19.1	19.3	19.2
Somewhat	43.8	55	68.3	40.7	22	44.4	47.4	46.5
Very much	43.8	13.2	14.3	36.8	22	23.5	26.2	25.4
Adverse effect	43.8	3.2	-	2.2	4.9	4.1	2.8	3.2
Not respond	43.8	12.1	3.2	3.8	2.4	8.8	4.3	5.6
Saving in time								
No impact	43.8	8.2	3.2	6		5.9	5.2	5.4
Somewhat	43.8	46.8	79.4	24.7	58.5	38.2	36.2	36.8
Very much	43.8	40.7	15.9	63.7	36.6	50.9	55.4	54.1
Adverse effect	43.8	1.1	-	2.2	-	2.1	1.2	1.5
Not respond	43.8	3.2	1.6	3.3	4.9	2.9	2	2.3
Improved organizational efficiency								
No impact	43.8	15	6.3	9.9	24.4	16.8	13.7	14.6
Somewhat	43.8	37.1	71.4	31.9	51.2	37.9	38.4	38.3
Very much	43.8	18.2	17.5	40.7	17.1	27.9	36.9	34.3
Adverse effect	43.8	1.1	-	6	2.4	2.1	1.6	1.7
Not respond	43.8	28.6	4.8	11.5	4.9	15.3	9.4	11.1
Savings in transportation cost								
No impact	43.8	5.4	4.8	2.7	4.9	5.3	4.7	4.9
Somewhat	43.8	40	77.8	30.2	39	39.4	34.1	35.6

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Very much	43.8	36.8	15.9	61	48.8	44.4	55	51.9
Adverse effect	43.8	3.9	-	3.3	-	2.9	1.7	2
Not respond	43.8	13.9	1.6	2.7	7.3	7.9	4.6	5.6

Annex Table - 2.18
Degree of Dependence on Telecom Services by Residence and Region , Pakistan, 2008

(Percent)

Degree of dependence		Punjab	Sindh	Balochistan	NWFP	AJK/FANA	Rural	Urban	Total
None		12.6	13.2	3.2	17.6	19.5	14.1	12.9	13.2
Somewhat (upto 25%)		45.3	50.4	71.4	29.1	56.1	48.5	44.6	45.8
Very much (upto 50%)		36.9	25	25.4	39	24.4	32.4	33.7	33.3
Total (100%)		5.3	11.4		14.3		5	8.8	7.7
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.19
Restoration of Out of Order Phones, by Residence and Region, Pakistan, 2008

(Percent)

Restoration Time		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Same day (within a day)		43	53.2	46	22.5	29.3	48.5	39.2	41.9
Within 2-days		33.4	23.2	25.4	43.4	4.9	26.5	33	31.1
3-6 days		16.9	12.5	19	26.9	36.6	13.8	20	18.2
Within two weeks		4	3.2	4.8	4.9	26.8	6.5	4.1	4.8
One month or more		2.8	7.9	4.8	2.2	2.4	4.7	3.7	4
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171
Mean		2.1	2.9	2.9	2.5	4	2.7	2.3	2.5

Annex Table - 2.20
Reason for using WLL by Residence and Region, Pakistan, 2008

(Percent)

Reasons	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Fixed network not available	6.1	7.1	4.8	6	2.4	8.8	5.1	6.1	72
Portability	14.5	17.1	6.3	23.6	14.6	12.6	17.6	16.1	189

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Better quality	9.1	11.1	1.6	15.4	9.8	7.9	11.1	10.2	119
More economical	8.1	4.6		8.8	12.2	6.8	7.2	7.1	83
Reliability	6	5.7	1.6	7.1	17.1	6.2	6.3	6.2	73
Ease and speed of service implementation	5.1	7.5	-	9.3	-	3.8	6.7	5.9	69
Others	3.5	2.5		2.2		2.6	2.8	2.7	32

Annex Table - 2.21
Type of WLL phone use/prefer by Residence and Region, Pakistan, 2008

(Percent)

Type of WLL		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Not responded		68.8	69.6	90.5	64.8	68.3	70.9	69	69.5
Desktop type		15.2	11.1	1.6	20.3	22	14.4	14.6	14.5
Handset type		16	19.3	7.9	14.8	9.8	14.7	16.5	16
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.22
Primary use of WLL phone by Residence and Region, Pakistan, 2008

(Percent)

Primary use of WLL		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Making phone calls		23.8	23.9	9.5	29.7	29.3	23.8	24.3	24.2
SMS		1.5	0.7	-	-	4.9	0.9	1.2	1.1
Others		2.1	-	-	1.1	2.4	2.4	1	1.4
No response		68.8	73.2	90.5	65.9	61	70.3	70.3	70.3
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.23
Connection of Mobile Phone Companies by Residence and Region , Pakistan, 2008

(Percent)

Connection	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Mobilink	57	57.9	58.7	50	29.3	52.9	56.2	55.3	647

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Ufone	35.5	32.9	52.4	51.1	56.1	32.6	41.5	38.9	456
Telenor	23.6	33.2	27	34.6	53.7	33.2	27.1	28.9	338
Warid	20.7	21.4	11.1	15.9	7.3	16.5	20.2	19.1	224
Pak China (Zong)	5.3	3.6	-	9.9	-	3.5	5.8	5.1	60
Instaphone	1	0.4	-	1.1	2.4	0.3	1.1	0.9	10

Annex Table - 2.24
Number of Mobile Phone Connections and Handset by Residence and Region, Pakistan, 2008

(Percent)

Number of connection / sets		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Number of mobile connections									
Not responded		1.8	1.8	1.6	2.2	2.4	2.1	1.8	1.9
One		56.9	55.4	52.4	47.3	56.1	58.8	53.1	54.7
Two		27.8	25.4	36.5	34.1	31.7	25.3	30.2	28.8
Three		9.8	14.3	9.5	13.2	9.8	11.8	11.2	11.4
Others		3.8	3.2	-	3.3	-	2.1	3.7	3.2
Number of mobile sets									
Not responded		3	1.8	1.6	2.2	2.4	2.4	2.5	2.5
One		68.9	68.9	65.1	76.9	73.2	72.6	69.1	70.1
Two		21.7	26.1	33.3	18.7	24.4	21.2	23.7	23
Three		4.5	3.2	-	1.1	-	2.9	3.4	3.2
Others		2	-	-	1.1	-	0.9	1.3	1.2
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.25
Mobile Number Portability (MNP): Knowledge, use and problem by Residence and Region, Pakistan, 2008

(Percent)

Knowledge / Use / Problem	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Aware of Mobile Number Portability (MNP)								
No	72.9	71.4	63.5	67.6	53.7	74.7	68.8	70.5
Yes	27.1	28.6	36.5	32.4	46.3	25.3	31.2	29.5
Availed service of MNP								
No	93.1	91.8	73	89	85.4	89.4	91.3	90.8
Yes	6.9	8.2	27	11	14.6	10.6	8.7	9.2

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Any problem regarding MNP									
No		99.8	100	100	99.5	100	100	99.8	99.8
Yes		0.2	-	-	0.5	-	-	0.2	0.2
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.26
Place of Purchase and Buying Capacity of Mobile Handset by Respondents, by Residence and Region, Pakistan, 2008

(Percent)

Place of Purchase / Buying Price of Mobile Phone		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Buy mobile handset from									
Any shop		60.8	62.1	73	48.4	63.4	62.4	59	59.9
No Response		4.1	1.8	1.6	2.7	2.4	3.8	2.9	3.2
Price would like to spend on mobile									
< 1000		1.7	-	-		2.4	0.9	1	0.9
1000-2500		22.3	22.1	1.6	18.1	17.1	26.8	17.7	20.3
2501-3500		13.6	16.4	7.9	13.2	14.6	17.1	12.6	13.9
3501-5000		25.3	25	49.2	17.6	26.8	22.9	26.4	25.4
5001-10000		24.3	20.7	25.4	17.6	19.5	13.2	26	22.3
10001-20000		5.8	2.9	-	2.7	2.4	3.5	4.5	4.2
20001+		0.8	0.7	-	3.3		0.9	1.2	1.1
No Response		6.3	12.1	15.9	27.5	17.1	14.7	10.7	11.9
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171
Mean Price would like to spend to buy a mobile phone		5012.1	4377.3	4444.4	4773.1	3939	3962.8	5079.2	4755

Annex Table - 2.27
Brand of Mobile Handset used by Residence and Region, Pakistan, 2008

(Percent)

Brands	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Nokia	61.8	68.6	33.3	79.1	53.7	63.8	64.5	64.3	753
Sony Erickson	17.9	15.4	25.4	9.3	19.5	15.9	16.6	16.4	192
Motorola	9.3	12.9	6.3	7.1	17.1	8.8	10.3	9.9	116
Samsung	11.7	15.7	36.5	19.2	19.5	15.6	15.4	15.5	181
Blackberry	2	0.4	-	0.5	-	0.3	1.6	1.2	14

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LG	8.3	7.9	28.6	3.8	-	7.6	8.5	8.3	97
Chinese origin	2.6	2.1	-	3.8	7.3	2.9	2.6	2.7	32
Siemens	1.2	-	-	0.5	-	0.9	0.6	0.7	8
Others	0.5	0.7	1.6	-	-	0.3	0.6	0.5	6

Annex Table - 2.28
Use of Mobile Phone other than Calls by Residence and Region, Pakistan, 2008

(Percent)

Brand	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
None	26	20.7	36.5	11	17.1	32.9	18.4	22.6	265
SMS	53.4	65.7	52.4	68.7	70.7	49.4	63.3	59.3	694
MMS	10.7	12.1	4.8	21.4	7.3	7.4	14.3	12.3	144
Calendar	42	48.2	17.5	60.4	34.1	37.9	47.5	44.7	524
Songs	27.3	36.4	30.2	44.5	29.3	29.1	33.7	32.4	379
Radio	26.3	40.7	19	46.7	19.5	29.7	33.3	32.3	378
Alarm	45.3	58.9	36.5	71.4	46.3	44.4	55.4	52.2	611
Camera	31.9	30	28.6	50	29.3	26.2	37.2	34	398
Internet - GPRS / EDGE	6.3	3.6	-	8.8	7.3	2.4	7.1	5.7	67
Game / Entertainment	13.6	22.5	17.5	37.4	17.1	16.5	21.1	19.7	231
Fax	0.5	4.6	-	2.2	-	0.9	2	1.7	20
Computer (PDA)	0.8	1.1	-	1.1	-	0.6	1	0.9	10
TV viewing	1.2	2.1	-	-	-	1.2	1.1	1.1	13
Other value added services	2.3	0.4	-	2.2	-	0.9	1.9	1.6	19

Annex Table - 2.29
Number of Messages sent/received by Residence and Region, Pakistan, 2008

(Percent)

Number of Messages	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Sent								
0	42	23.2	44.4	25.3	14.6	43.5	30.2	34.1
1 - 10	33.4	48.2	52.4	33.5	56.1	36.5	39.7	38.8
11 - 20	14.2	15.4	3.2	14.3	12.2	10	15.4	13.8
21 - 50	6.9	5	-	22	14.6	6.8	9.5	8.7
51+	3.5	8.2	-	4.9	2.4	3.2	5.2	4.6
Received								
0	38.3	23.9	44.4	25.3	14.6	42.4	28.3	32.4
1 - 10	30.9	42.9	50.8	31.3	46.3	35.3	35.5	35.4
11 - 20	16.9	15.7	4.8	20.3	17.1	11.8	18.4	16.5
21 - 50	9.4	10.7	-	17.6	19.5	7.1	12.4	10.8
51+	4.5	6.8	-	5.5	2.4	3.5	5.4	4.9
Total								
Percent	100	100	100	100	100	29	71	100
Number	605	280	63	182	41	340	831	1171
Mean number of SMS sent	9.9	15	4.2	16.9	12	8.8	13.3	12
Mean number of SMS Received	13.2	16.8	4	16.6	14.2	9.5	16	14.1

Annex Table - 2.30
Language preferred to send/receive SMS by Residence and Region, Pakistan, 2008

(Percent)

Language preference	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
English	45.6	56.4	46	50	53.7	41.2	52.5	49.2	576
Urdu	10.6	32.9	52.4	36.3	43.9	18.8	25.2	23.3	273
Roman Urdu	30.7	39.3		37.4	22	23.5	35.3	31.9	373
Others	1	5.7	7.9	0.5		3.8	1.8	2.4	28

Annex Table - 2.31
Purpose of sending / receiving SMS by Residence and Region, Pakistan, 2008

(Percent)

Purpose	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Business	27.1	50.7	30.2	33.5	19.5	25.3	37.1	33.6	394
Personal	40.5	63.9	47.6	61.5	46.3	41.2	53.5	50	585
Family	36.2	61.1	50.8	50.5	65.9	34.4	51	46.2	541
Social	38.3	45.7	30.2	46.2	61	35	44.4	41.7	488
Education	10.4	11.8	4.8	30.8	17.1	10.6	15.2	13.8	162
News	8.4	12.9	1.6	13.2	7.3	6.5	11.2	9.8	115
Sports	6.1	9.6	3.2	15.9	4.9	6.5	9	8.3	97
Others	2	3.2	-	-	-	3.5	1.1	1.8	21

Annex Table - 2.32
Respondents using type of Internet connection by Residence and Region, Pakistan, 2008

(Percent)

Type	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Dial-up	18.3	13.2	14.3	39.6	41.5	18.8	21.9	21	246
DSL/ADSL	7.9	3.9		6.6	24.4	5	7.7	6.9	81
Wireless / Broadband	7.3	5.7	1.6	10.4	2.4	3.8	8.2	6.9	81
Mobile (GPRS / EDGE)	3.6	1.1	-	0.5	-	0.6	2.9	2.2	26
Cable Broadband	4	5.7	-	11	2.4	2.9	6.1	5.2	61
Would like to have Internet connection	14	14.3	31.7	16.5	19.5	16.8	15.2	15.6	183

Annex Table - 2.33
Respondent's reason for not using Internet by Residence and Region, Pakistan, 2008

(Percent)

Reason	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Not required	32.1	52.5	33.3	30.2	29.3	43.8	33.7	36.6	429
Service not available	3.1	5.7	3.2	8.2	17.1	9.1	3.4	5	59
Cannot afford	5.1	4.3	4.8	25.3	7.3	7.6	8.3	8.1	95
Too complicated	5.1	8.2	6.3	20.3	4.9	11.2	7.1	8.3	97
Others	1.5	0.4	-	0.5	-	1.8	0.6	0.9	11

Annex Table - 2.34
Place where Respondents use Internet by Residence and Region, Pakistan, 2008

(Percent)

Place	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Office	24.1	16.1	7.9	34.1	31.7	16.5	25.9	23.1	271
Home	22.1	16.1	12.7	34.6	31.7	15	25.5	22.5	263
Neighbours	0.7	0.4	-	1.1	2.4	0.6	0.7	0.7	8
Friend / Relative	2.3	2.9	-	4.9	4.9	3.2	2.6	2.8	33
Educational institutions	4	0.4	-	7.7	4.9	2.6	3.9	3.5	41
Net Cafe	8.6	7.1	4.8	20.3	29.3	10.6	10.6	10.6	124

Annex Table - 2.35
Number of persons using Internet by Residence and Region, Pakistan, 2008

(Percent)

Frequency of using Internet		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
In Home									
Not responded		70.1	83.9	87.3	59.3	65.9	81.5	68.8	72.5
1		7.8	3.2	1.6	8.8	14.6	5	7.5	6.7
2 - 3		16	9.3	9.5	25.8	14.6	10.3	17.7	15.5
4 - 5		4.5	2.9	1.6	6	4.9	2.6	4.8	4.2
6+		1.7	0.7	-	-		0.6	1.2	1
In Office									
Not responded		71.9	87.1	92.1	63.7	70.7	83.8	71.8	75.3
1		4.6	3.9	4.8	11		2.6	6.4	5.3
2 - 3		7.4	5.4	1.6	9.3	17.1	5.9	7.8	7.3
4-5		4.8	1.8	1.6	4.9	9.8	2.1	4.9	4.1
6+		11.2	1.8	-	11	2.4	5.6	9	8
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171
Mean at home		0.8	0.4	0.3	1	0.7	0.4	0.8	0.7
Mean at office		1.9	0.4	0.1	2.7	1	0.8	1.8	1.5

Annex Table - 2.36
Purpose of using Internet facility by Respondents, by Residence and Region, Pakistan, 2008

Purpose of use	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
E-mail	29.6	24.3	19	50	61	25.3	34.8	32	375
Voice communication	7.8	7.5		15.9	9.8	5.3	10	8.6	101
News / Sports / Entertainment	15.4	11.1	7.9	20.9	34.1	14.4	15.9	15.5	181
Employment help	8.4	6.8	3.2	17	2.4	7.6	9.4	8.9	104
Office work	21.8	12.9	14.3	30.2	24.4	16.5	22.4	20.7	242
Business / trade	13.6	13.6	9.5	31.3	14.6	10.9	18.3	16.1	189
Travel booking	3.5	6.1	1.6	12.6	2.4	4.7	5.7	5.4	63
Studies / Education	17.4	11.1	7.9	28	22	13.5	18.7	17.2	201

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Watching movies	4.5	6.4	7.9	11.5	9.8	5.9	6.6	6.4	75
Chatting	16.7	12.5	7.9	26.9	22	14.7	17.9	17	199
Banking	5	7.1	4.8	14.3	2.4	3.2	8.3	6.8	80
Health / Medical	4.6	5	3.2	11	2.4	4.4	6	5.6	65
Online shopping	2.5	6.8	3.2	18.7		4.1	6.7	6	70
Games	3.8	7.1	6.3	10.4	9.8	5	6.4	6	70
Others	1.2	2.5		1.1	2.4	1.5	1.4	1.5	17

Annex Table - 2.37
Impact of FLL / WLL on Letter writing, Meetings & Travel by Residence and Region, Pakistan, 2008
(Percent)

Impact of FLL / WLL on		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Letters writing									
No change		7.1	1.4	4.8	4.9	31.7	5.9	6.3	6.1
Somewhat		26.9	27.1	22.2	29.1	36.6	27.1	27.6	27.4
Very much		35	30.4	36.5	46.2	9.8	30.6	36.6	34.8
Not responded		30.9	41.1	36.5	19.8	22	36.5	29.6	31.6
Face to face meetings									
No change		7.8	1.8	1.6	4.9	14.6	6.5	5.5	5.8
Somewhat		38.3	35	55.6	35.7	51.2	36.5	39.4	38.5
Very much		22	18.2	6.3	36.3	9.8	19.1	23.2	22
Not responded		31.9	45	36.5	23.1	24.4	37.9	31.9	33.6
Travelling									
No change		8.8	2.9	1.6	5.5	22	7.1	6.9	6.9
Somewhat		32.4	30	61.9	26.4	34.1	31.5	33	32.5
Very much		27.3	20.4		39.6	24.4	22.6	27.3	26
Not responded		31.6	46.8	36.5	28.6	19.5	38.8	32.9	34.6
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.38
Impact of Mobile on Letter writing, Meetings and Travel by Residence and Region, Pakistan, 2008

(Percent)

Mobile		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Letters writing									
No change		6.4	3.6	3.2	6	19.5	7.4	5.4	6
Somewhat		26.6	42.9	39.7	36.8	39	34.7	32.6	33.2
Very much		62.6	43.6	50.8	52.7	31.7	50	56.8	54.8
Not responded		4.3	10	6.3	4.4	9.8	7.9	5.2	6
Face to face meetings									
No change		8.4	2.1		4.9	4.9	7.4	5.2	5.8
Somewhat		46.6	55.4	84.1	30.8	51.2	50.3	47.7	48.4
Very much		41.2	28.6	9.5	58.8	39	34.1	41.2	39.1
Not responded		3.8	13.9	6.3	5.5	4.9	8.2	6	6.7
Travelling									
No change		7.3	2.5	4.8	4.4	9.8	6.8	5.2	5.6
Somewhat		36.7	58.6	85.7	28	41.5	45.6	42.5	43.4
Very much		51.2	29.3	1.6	59.3	41.5	39.7	46.1	44.2
Not responded		4.8	9.6	7.9	8.2	7.3	7.9	6.3	6.7
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.39
Impact of Internet on Letter writing, Meetings and Travel by Residence and Region, Pakistan, 2008)

Internet		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Letters writing									
No change		11.2	9.6	3.2	8.2	31.7	10.9	10.6	10.7
Somewhat		13.2	12.1	4.8	15.9	22	13.5	13.1	13.2
Very much		21.7	15.4	1.6	30.2	12.2	17.4	21.2	20.1
Not responded		53.9	62.9	90.5	45.6	34.1	58.2	55.1	56
Face to face meetings									
No change		18.2	9.6	-	7.7	36.6	15	13.8	14.2
Somewhat		14.9	13.9	6.3	18.1	22	14.1	15.3	14.9
Very much		11.9	9.3	1.6	29.1	4.9	10.6	14.2	13.2
No response		55	67.1	92.1	45.1	36.6	60.3	56.7	57.7
Travelling									
No change		18.2	10.7	-	9.9	39	14.7	14.9	14.9
Somewhat		14.9	15	3.2	9.9	26.8	14.7	13.6	13.9
Very much		12.1	6.1		29.7	4.9	9.1	13.8	12.5
Not responded		54.9	68.2	96.8	50.5	29.3	61.5	57.6	58.8
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.40
Effect of FLL/WLL on different Aspect of Life by Residence and Region, Pakistan, 2008

(Percent)

FLL / WLL		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Broadened social circle									
Not responded		28.3	40.7	50.8	21.4	19.5	35.6	29.2	31.1
No change		11.2	6.1	11.1	3.3	36.6	10.6	9.3	9.6
Somewhat		46.4	38.6	36.5	23.6	41.5	38.5	41	40.3
Very much		14	14.6	1.6	51.6	2.4	15.3	20.5	19
Helped in family cohesion									
Not responded		28.3	43.2	39.7	22	14.6	35.3	29.2	31
No change		6.6	4.6	6.3	2.7	19.5	7.9	5.2	6
Somewhat		39.7	37.1	49.2	26.4	56.1	37.4	38.4	38.1
Very much		25.5	15	4.8	48.9	9.8	19.4	27.2	24.9
Improved access to doctor / health facility									
Not responded		28.9	47.9	55.6	21.4	14.6	37.6	31.4	33.2
No change		16.7	12.1	9.5	5.5	48.8	13.8	14.9	14.6
Somewhat		38	32.5	30.2	25.3	29.3	31.8	34.9	34
Very much		16.4	7.5	4.8	47.8	7.3	16.8	18.8	18.2
Helped in knowledge/ education									
Not responded		30.2	45.7	68.3	35.7	34.1	37.9	36.6	37
No change		27.3	24.6	11.1	10.4	56.1	25.9	23.5	24.2
Somewhat		31.2	21.4	19	25.3	9.8	25.3	27.1	26.6
Very much		11.2	8.2	1.6	28.6		10.9	12.9	12.3
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.41
Effect of Mobile on different Aspect of Life by Residence and Region, Pakistan, 2008

(Percent)

Mobile	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Broadened social circle								
Not responded	3.6	11.8	3.2	6.6	12.2	10.6	4.6	6.3
No change	6	6.4	4.8	3.8	22	5.6	6.5	6.2
Somewhat	44.5	59.3	79.4	32.4	34.1	49.4	46.9	47.7
Very much	46	22.5	12.7	57.1	31.7	34.4	42	39.8
Helped in family cohesion								
Not responded	3.1	7.5	7.9	4.9	2.4	6.8	3.9	4.7
No change	7.1	1.8	3.2	4.4	2.4	4.4	5.3	5

Somewhat		40	62.9	76.2	36.8	70.7	49.7	47.3	48
Very much		49.8	27.9	12.7	53.8	24.4	39.1	43.6	42.3
Improved access to doctor / health facility									
Not responded		4	22.9	17.5	9.3	2.4	11.8	9.3	10
No change		23.5	16.8	7.9	7.7	41.5	21.2	18.4	19.2
Somewhat		40	49.6	66.7	31.3	39	42.1	42.5	42.4
Very much		32.6	10.7	7.9	51.6	17.1	25	29.8	28.4
Helped in knowledge / education									
Not responded		5.8	24.6	46	20.3	26.8	14.7	15.8	15.5
No change		32.6	28.9	11.1	17	46.3	31.8	27.3	28.6
Somewhat		40.2	39.3	38.1	21.4	19.5	38.8	35.1	36.2
Very much		21.5	7.1	4.8	41.2	7.3	14.7	21.8	19.7
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.42
Effect of Internet on different Aspect of Life by Residence and Region, Pakistan, 2008

(Percent)

Internet	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Broadened social circle								
No response	50.9	63.2	90.5	50.5	26.8	58.8	53.5	55.1
No change	24.3	16.8	-	6.6	43.9	20.6	18.5	19.1
Somewhat	15.4	12.9	9.5	17	19.5	12.1	16	14.9
Very much	9.4	7.1		25.8	9.8	8.5	11.9	10.9
Helped in family cohesion								
No response	52.7	66.4	96.8	51.1	34.1	60.6	56.2	57.5
No change	29.6	16.4	-	15.4	43.9	24.7	22.5	23.1
Somewhat	13.1	11.4	3.2	13.2	17.1	9.4	13.5	12.3
Very much	4.6	5.7		20.3	4.9	5.3	7.8	7.1
Improved access to doctor/health facility								
No response	52.6	68.9	95.2	51.1	29.3	60.3	56.7	57.7
No change	36	19.3	1.6	18.7	58.5	27.4	28.6	28.3
Somewhat	9.6	8.9	3.2	14.8	7.3	8.2	10.5	9.8
Very much	1.8	2.9		15.4	4.9	4.1	4.2	4.2
Helped in knowledge/education								
No response	51.2	63.6	93.7	47.8	31.7	57.9	54.2	55.3

No change		15	11.4	-	4.4	22	12.6	11.7	12
Somewhat		13.6	13.6	1.6	10.4	14.6	13.2	12.2	12.5
Very much		20.2	11.4	4.8	37.4	31.7	16.2	22	20.3
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.43
Impact of FLL/WLL on different Benefits of Life by Residence and Region, Pakistan, 2008

(Percent)

FLL / WLL Impact	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Helpful in solving day to day problems								
No response	27.8	38.6	63.5	20.9	12.2	32.6	29.8	30.7
No impact	8.6	8.9	1.6	1.1	43.9	8.5	8.3	8.4
Somewhat	41.8	36.8	31.7	31.3	41.5	40.6	37.5	38.4
Very much	21.8	15.7	3.2	46.7	2.4	18.2	24.3	22.5
Help in search of work / livelihood								
No response	30.7	47.9	68.3	28	17.1	38.8	34.8	36
No impact	27.6	12.9	3.2	6	58.5	21.5	20.1	20.5
Somewhat	30.2	29.3	23.8	35.2	14.6	27.9	30.7	29.9
Very much	11.4	10	4.8	30.8	9.8	11.8	14.4	13.7
Increase in efficiency at work								
No response	29.3	44.3	65.1	28.6	19.5	36.8	33.3	34.3
No impact	17	7.9	3.2	3.8	39	12.1	13.1	12.8
Somewhat	35.5	37.9	25.4	27.5	39	35	34.2	34.4
Very much	18.2	10	6.3	40.1	2.4	16.2	19.4	18.4
Helpful in finding new customer								
No response	29.1	45.4	68.3	25.8	22	35.9	33.7	34.3
No impact	24.6	14.6	3.2	8.2	68.3	19.4	20.3	20.1
Somewhat	33.2	31.8	22.2	28	7.3	32.6	29.7	30.6
Very much	13.1	8.2	6.3	37.9	2.4	12.1	16.2	15
Increase in sales and turnover								
No response	29.8	43.2	68.3	26.4	24.4	36.2	33.6	34.3
No impact	24.1	10.4	1.6	9.3	34.1	16.8	18.1	17.7
Somewhat	35.4	35.4	22.2	21.4	31.7	34.1	31.6	32.4
Very much	10.7	11.1	7.9	42.9	9.8	12.9	16.7	15.6
Increase in income								

No response		29.8	41.8	68.3	25.8	24.4	34.7	33.6	33.9
No impact		24.3	11.1	3.2	17.6	36.6	17.6	20.1	19.4
Somewhat		35.7	36.8	17.5	25.8	29.3	37.6	31.4	33.2
Very much		10.2	10.4	11.1	30.8	9.8	10	14.9	13.5
Helpful in instant market / price information									
No response		30.1	45	68.3	24.7	31.7	36.5	34.3	34.9
No impact		24.6	7.9	3.2	3.8	39	17.9	16.2	16.7
Somewhat		30.4	31.8	25.4	27.5	26.8	30	29.8	29.9
Very much		14.9	15.4	3.2	44	2.4	15.6	19.6	18.4
Providing information on new products									
No response		30.4	47.9	66.7	25.3	34.1	37.6	35.1	35.9
No impact		29.4	12.1	4.8	6.6	46.3	19.7	21.5	21
Somewhat		27.8	31.1	22.2	24.7	19.5	30	26.5	27.5
Very much		12.4	8.9	6.3	43.4		12.6	16.8	15.6
Better interaction with utility departments									
No response		30.6	48.6	79.4	26.4	53.7	38.2	37.4	37.7
No impact		22	13.6	1.6	7.1	17.1	16.2	16.5	16.4
Somewhat		35.7	29.3	17.5	20.9	24.4	33.2	29.4	30.5
Very much		11.7	8.6	1.6	45.6	4.9	12.4	16.7	15.5
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.44

Impact of Mobile Phone on different Benefits of Life by Residence and Region, Pakistan, 2008

(Percent)

Mobile Impact	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Helpful in solving day to day problems								
No response	2.6	2.9	3.2	7.1	4.9	3.5	3.5	3.5
No impact	6.1	7.1	9.5	2.2	34.1	5	7.7	6.9
Somewhat	46	51.4	74.6	45.1	34.1	49.1	47.9	48.2
Very much	45.3	38.6	12.7	45.6	26.8	42.4	40.9	41.3
Help in search of work/livelihood								
No response	4.8	18.2	17.5	13.7	7.3	10.3	10.1	10.2
No impact	26.1	13.9	7.9	10.4	46.3	19.1	21.1	20.5
Somewhat	40	48.2	60.3	42.3	39	45.9	42.4	43.4
Very much	29.1	19.6	14.3	33.5	7.3	24.7	26.5	26

Increase in efficiency at work									
No response		3.1	16.1	12.7	11.5	4.9	8.5	7.9	8.1
No impact		17.9	11.1	4.8	9.9	43.9	15.6	15	15.2
Somewhat		43	51.1	74.6	37.9	31.7	43.2	46.3	45.4
Very much		36	21.8	7.9	40.7	19.5	32.6	30.7	31.3
Helpful in finding new customer									
No response		4.3	17.9	15.9	12.6	7.3	9.7	9.5	9.6
No impact		28.3	20.7	7.9	11.5	61	25	23.5	23.9
Somewhat		37.5	45.4	63.5	35.2	24.4	41.2	39.5	40
Very much		29.9	16.1	12.7	40.7	7.3	24.1	27.6	26.6
Increase in sales and turnover									
No response		4.5	15.4	12.7	13.2	9.8	7.9	9.5	9.1
No impact		27.8	16.1	7.9	11.5	39	23.8	20.9	21.8
Somewhat		42	47.9	66.7	36.3	29.3	43.5	43.3	43.4
Very much		25.8	20.7	12.7	39	22	24.7	26.2	25.8
Increase in income									
No response		4.5	11.4	11.1	11.5	7.3	7.4	7.8	7.7
No impact		27.1	21.1	14.3	18.7	43.9	23.5	24.5	24.3
Somewhat		45.8	48.2	58.7	40.7	29.3	47.9	44.8	45.7
Very much		22.6	19.3	15.9	29.1	19.5	21.2	22.9	22.4
Helpful in instant market/price information									
No response		4.8	16.1	11.1	9.9	17.1	7.6	9.6	9.1
No impact		28.3	17.5	9.5	8.8	43.9	20.9	22.7	22.2
Somewhat		41.7	41.4	71.4	34.6	34.1	46.8	39.8	41.8
Very much		25.3	25	7.9	46.7	4.9	24.7	27.8	26.9
Providing information on new products									
No response		5.5	20.4	17.5	11.5	19.5	10	11.6	11.1
No impact		34.2	22.5	6.3	6	43.9	25.6	26	25.9
Somewhat		38.2	42.1	66.7	37.4	31.7	44.7	38.5	40.3
Very much		22.1	15	9.5	45.1	4.9	19.7	23.9	22.7
Better interaction with utility departments									
No response		7.1	26.8	39.7	15.4	39	14.7	16.5	16
No impact		35.7	33.2	9.5	17.6	26.8	32.6	29.7	30.6
Somewhat		42.8	32.1	49.2	38.5	24.4	39.7	39.1	39.3
Very much		14.4	7.9	1.6	28.6	9.8	12.9	14.7	14.2
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.45
Impact of Internet on different Benefits of Life by Residence and Region , Pakistan, 2008

(Percent)

Internet Impact	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Helpful in solving day to day problems								
No response	50.4	60	90.5	52.7	31.7	55.6	54.2	54.6
No impact	28.3	16.8	-	9.3	41.5	23.2	20.8	21.5
Somewhat	13.4	16.1	7.9	16.5	19.5	13.5	14.8	14.4
Very much	7.9	7.1	1.6	21.4	7.3	7.6	10.2	9.5
Help in search of work / livelihood								
No response	51.2	63.9	93.7	51.6	36.6	57.4	55.6	56.1
No impact	23.6	16.1	-	7.1	22	20.9	16.7	17.9
Somewhat	15.5	12.9	3.2	19.8	34.1	15.3	15.6	15.5
Very much	9.6	7.1	3.2	21.4	7.3	6.5	12	10.4
Increase in efficiency at work								
No response	51.1	62.9	95.2	51.1	29.3	57.1	54.9	55.5
No impact	23.5	17.1	-	8.2	29.3	20.3	17.8	18.5
Somewhat	15.9	12.5	3.2	12.6	31.7	14.1	14.6	14.4
Very much	9.6	7.5	1.6	28	9.8	8.5	12.8	11.5
Helpful in finding new customer								
No response	52.1	62.9	98.4	52.7	34.1	56.8	56.6	56.6
No impact	29.1	18.9	-	7.1	51.2	23.8	21.9	22.5
Somewhat	12.2	11.8	-	15.9	9.8	13.2	11.4	12
Very much	6.6	6.4	1.6	24.2	4.9	6.2	10.1	9
Increase in sales and turnover								
No response	52.6	63.9	96.8	54.9	39	58.8	57	57.6
No impact	29.8	18.6	-	8.8	51.2	22.4	23.2	23
Somewhat	11.6	10.7	1.6	12.1	7.3	12.4	10.1	10.8
Very much	6.1	6.8	1.6	24.2	2.4	6.5	9.6	8.7
Increase in income								
No response	51.9	62.9	98.4	52.2	31.7	56.8	56.2	56.4
No impact	31.1	19.3	-	9.3	48.8	25	23.3	23.8
Somewhat	12.2	11.4	1.6	15.9	17.1	14.1	11.4	12.2
Very much	4.8	6.4	-	22.5	2.4	4.1	9	7.6
Helpful in instant market/price information								
No response	52.4	62.5	93.7	51.1	39	57.4	56	56.4
No impact	24.5	16.1	-	4.4	22	18.5	17.7	17.9
Somewhat	15.2	11.8	4.8	11	24.4	13.2	13.6	13.5
Very much	7.9	9.6	1.6	33.5	14.6	10.9	12.8	12.2

Providing information on new products									
No response		52.6	62.9	96.8	50	39	57.9	56	56.5
No impact		23	12.9	-	5.5	17.1	17.1	16.1	16.4
Somewhat		13.7	12.9	1.6	9.3	31.7	12.1	13.1	12.8
Very much		10.7	11.4	1.6	35.2	12.2	12.9	14.8	14.3
Better interaction with utility departments									
No response		52.9	66.4	98.4	52.7	58.5	58.8	58.7	58.8
No impact		32.2	19.3	-	19.2	22	25.9	24.7	25
Somewhat		11.1	11.1	-	8.8	14.6	10.6	10.1	10.2
Very much		3.8	3.2	1.6	19.2	4.9	4.7	6.5	6
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.46
FLL/WLL made Impact on different Benefits of Life by Residence and Region, Pakistan, 2008
(Percent)

Impact of FLL/WLL	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Ease of remittances								
No response	31.2	45	65.1	24.7	14.6	37.1	33.8	34.8
No impact	29.8	15.4	7.9	13.2	51.2	25.9	22.3	23.3
Somewhat	31.2	29.6	23.8	26.9	34.1	26.2	31.4	29.9
Very much	7.8	10	3.2	35.2		10.9	12.5	12
Reduction in transaction time of deals								
No response	30.6	40	63.5	23.1	14.6	35	32	32.9
No impact	13.9	7.1	3.2	1.6	41.5	12.1	10.2	10.8
Somewhat	44.6	35	28.6	30.8	39	36.2	40.3	39.1
Very much	10.9	17.9	4.8	44.5	4.9	16.8	17.4	17.3
Helpful in crop management								
No response	56.2	60.4	81	54.4	39	52.6	59.7	57.6
No impact	21.7	17.9	1.6	5.5	29.3	14.1	18.8	17.4
Somewhat	18.5	16.4	15.9	17	26.8	24.4	15.3	17.9
Very much	3.6	5.4	1.6	23.1	4.9	8.8	6.3	7
Helpful in livestock management								
No response	57.5	60	85.7	58.8	34.1	51.5	62.1	59
No impact	22.1	20	6.3	7.7	34.1	17.1	19.7	19

Somewhat		16.9	15.7	7.9	17.6	29.3	23.8	13.7	16.7
Very much		3.5	4.3	-	15.9	2.4	7.6	4.5	5.4
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.47

Mobile phone made Impact on different Benefits of Life by Residence and Region, Pakistan, 2008

(Percent)

Impact of Mobile Phone		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Ease of remittances									
No response		5.6	18.2	6.3	7.7	9.8	11.5	8.2	9.1
No impact		30.4	19.3	12.7	8.8	39	23.8	23.7	23.7
Somewhat		44.3	53.6	71.4	34.6	31.7	47.9	45.2	46
Very much		19.7	8.9	9.5	48.9	19.5	16.8	22.9	21.1
Reduction in transaction time of deals									
No response		5	7.9	6.3	8.8	4.9	7.4	5.9	6.3
No impact		14	7.1	1.6	3.3	36.6	10.9	10.8	10.8
Somewhat		54.2	58.2	79.4	37.4	31.7	52.1	53.5	53.1
Very much		26.8	26.8	12.7	50.5	26.8	29.7	29.7	29.7
Helpful in crop management									
No response		36.7	41.1	65.1	40.7	41.5	32.4	43.2	40.1
No impact		27.1	28.6	-	6.6	26.8	18.8	24.4	22.8
Somewhat		24.3	24.3	28.6	25.3	29.3	33.8	21.2	24.9
Very much		11.9	6.1	6.3	27.5	2.4	15	11.2	12.3
Helpful in livestock management									
No response		39	44.3	81	46.7	31.7	36.2	46.5	43.5
No impact		30.2	30.7	1.6	6	26.8	22.6	25.9	24.9
Somewhat		20.3	20.4	15.9	20.3	26.8	27.6	17.3	20.3
Very much		10.4	4.6	1.6	26.9	14.6	13.5	10.3	11.3
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.48
Internet made Impact on different Benefits of Life by Residence and Region, Pakistan, 2008

(Percent)

Impact of Internet		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Ease of remittances									
No response		53.2	63.6	95.2	48.9	24.4	58.2	55.5	56.3
No impact		30.9	17.9	-	9.9	56.1	25.9	22.9	23.7
Somewhat		11.2	12.5	4.8	17.6	17.1	10.9	13	12.4
Very much		4.6	6.1	-	23.6	2.4	5	8.7	7.6
Reduction in transaction time of deals									
No response		53.7	63.2	93.7	51.1	24.4	58.8	55.8	56.7
No impact		24.5	16.1	-	6.6	48.8	20	18.9	19.2
Somewhat		16	12.9	6.3	15.4	19.5	14.1	15	14.8
Very much		5.8	7.9	-	26.9	7.3	7.1	10.2	9.3
Helpful in crop management									
No response		69.8	72.5	98.4	71.4	46.3	67.4	73	71.4
No impact		21.5	17.9	-	15.4	34.1	22.1	17.7	19
Somewhat		7.1	7.1	1.6	4.9	17.1	7.4	6.6	6.8
Very much		1.7	2.5	-	8.2	2.4	3.2	2.6	2.8
Helpful in livestock management									
No response		70.4	73.2	100	74.7	39	67.6	74.1	72.2
No impact		19.3	17.5	-	15.9	39	20.9	16.8	18
Somewhat		7.6	7.9	-	3.8	17.1	8.2	6.5	7
Very much		2.6	1.4	-	5.5	4.9	3.2	2.5	2.7
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.49
Place where Computer used by Respondents, by Residence and Region, Pakistan, 2008

(Percent)

Place	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Home	36.9	24.3	11.1	48.9	48.8	26.5	38.1	34.8	407
Office	29.1	13.6	9.5	37.4	31.7	16.5	29.5	25.7	301
Neighbours	0.7	0.4		2.7		0.3	1.1	0.9	10
Net cafe	6.1	2.9	3.2	17.6	26.8	7.4	7.8	7.7	90
Educational institution	5.8	-	-	8.8	17.1	4.4	5.2	5	58
Others	3	1.8	-	-	4.9	2.6	1.9	2.1	25

Annex Table - 2.50

Purpose of using Computer by Residence and Region, Pakistan, 2008

(Percent)

Purpose of use	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Professional work	32.6	25	15.9	39	36.6	23.8	33.9	31	363
Entertainment / sports	22.6	15.7	4.8	34.6	43.9	18.8	24.2	22.6	265
Internet	26.8	17.5	12.7	44.5	43.9	19.1	30.4	27.2	318
Others	3.6	2.9	-	2.2	-	3.8	2.5	2.9	34

Annex Table - 2.51
Reason for not using Computer by Residence and Region, Pakistan, 2008

(Percent)

Reason for not use	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Not required	51.6	57.1	54	24.2	29.3	59.1	43.4	48	562
Cannot afford	6.8	6.1	17.5	15.9	22	10.6	8.5	9.1	107
Others	3.3	2.9	-	-	-	2.1	2.5	2.4	28
Would like to buy computer in future	22.5	38.6	27	35.7	46.3	30.3	29.1	29.5	345

Annex Table - 2.52
Price would like to buy Computer by Residence and Region, Pakistan, 2008

(Percent)

Price		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
< 5000		4.8	4.3	4.8	12.1	12.2	7.1	5.7	6.1
5000 - 10000		11.4	23.6	22.2	14.3	31.7	15.9	16.1	16.1
10001 - 25000		4.8	8.2	1.6	4.9	2.4	4.7	5.7	5.4
25001+		1.5	1.4	-	3.8	-	1.2	1.9	1.7
Not responded		77.5	62.5	71.4	64.8	53.7	71.2	70.6	70.8
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171
Mean Price		2641.5	4044.6	2254	3646.7	3097.6	2710.3	3299.4	3128.4

Annex Table - 2.53

Long Distance International (LDI) Calls Practices by Residence and Region, Pakistan, 2008

(Percent)

LDI Calls		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Use LDI calling cards									
No		84.8	82.5	92.1	72	80.5	82.4	82.6	82.5
Yes		15.2	17.5	7.9	28	19.5	17.6	17.4	17.5
Expenditure on LDI calling cards per month									
< 300		37.6	88.9	90.5	73.1	85.4	87.4	85.1	3.5
300 - 1000		8.6	10	7.9	14.3	9.8	10.3	9.6	9.6
1001 +		3.8	1.1	1.6	12.6	4.9	2.4	5.3	4.4
Nation-wide calls									
No		91.4	83.6	98.4	84.6	92.7	87.4	89.5	88.9
Yes		8.6	16.4	1.6	15.4	7.3	12.6	10.5	11.1
Overseas calls									
No		88.4	92.9	92.1	75.3	82.9	88.5	87	87.4
Yes		11.6	7.1	7.9	24.7	17.1	11.5	13	12.6
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.54
Impact Assessment of Competition in LDI and Calling Cards by Residence and Region, Pakistan,2008

(Percent)

Impact assessment	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Increased business through overseas contact								
No effect	79.5	81.1	100	68.7	95.1	80.6	79.5	79.8
Somewhat	15.9	17.1	-	20.3	2.4	15.6	15.5	15.5
Very much	4.6	1.8	-	11	2.4	3.8	4.9	4.6
Increased family contact at national and International level								
No effect	70.1	73.6	100	65.9	73.2	71.2	72.3	72
Somewhat	16.4	21.8	-	17	9.8	18.8	15.8	16.7
Very much	13.6	4.6	-	17	17.1	10	11.9	11.4
Reduction in business travel								
No effect	75.5	72.1	100	66.5	82.9	74.4	75.1	74.9
Somewhat	17.2	23.6	-	12.6	9.8	16.8	16.8	16.8
Very much	7.3	4.3	-	20.9	7.3	8.8	8.1	8.3
Reduction in expenditure								

on telecom									
No effect		76.5	80.7	100	65.9	80.5	75.6	78	77.3
Somewhat		17	16.8	-	24.2	19.5	20.3	16	17.3
Very much		6.4	2.5	-	9.9		4.1	6	5.5
Total	Percent	100	100	100	100	100	29	71	100
	Number	605	280	63	182	41	340	831	1171

Annex Table - 2.55
Impact of using UAN, PRN and TFN by Residence and Region, Pakistan, 2008

(Percent)

Impact	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Universal Access Number (UAN)								
Not responded	48.6	54.3	100	40.7	29.3	52.4	50.2	50.8
Nominal impact	23.6	32.9	-	8.8	26.8	25.3	21.2	22.4
Good impact	26	11.1	-	15.9	41.5	17.9	20.8	20
Substantial impact	1.8	1.8	-	34.6	2.4	4.4	7.8	6.8
Premium Rate Number (PRN)								
Not responded	49.8	55.7	100	57.7	24.4	55.6	53.7	54.2
Nominal impact	32.6	35	-	13.2	43.9	32.1	27.4	28.8
Good impact	16.2	9.3	-	21.4	24.4	11.8	16	14.8
Substantial impact	1.5		-	7.7	7.3	0.6	2.9	2.2
Toll Free Number (TFN)								
Not responded	47.9	46.4	100	39.6	24.4	48.8	48	48.2
Nominal impact	19	32.1	-	8.2	19.5	23.8	17.7	19.5
Good impact	29.9	16.4	-	13.2	41.5	18.8	24.5	22.9
Substantial impact	3.1	5	-	39	14.6	8.5	9.7	9.4
Total Percent	100	100	100	100	100	29	71	100
Total Number	605	280	63	182	41	340	831	1171

Annex Table - 2.56
Usefulness of Access to Services like UAN, PRN and TFN through Mobile phone by Residence and Region, Pakistan, 2008

(Percent)

Usefulness	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
No	37.7	23.6	12.7	18.1	19.5	30.6	28.8	29.3
Yes	30.2	33.2	61.9	36.8	56.1	34.1	34.8	34.6
Don't know	32.1	43.2	25.4	45.1	24.4	35.3	36.5	36.1
Total Percent	100	100	100	100	100	29	71	100
Total Number	605	280	63	182	41	340	831	1171

Annex Table - 2.57
Monthly Income of Businessman / working person by Residence and Region, Pakistan, 2008

(Percent)

Income in Rs.		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Upto 5000		9.8	4.5	3.2	5.6	12.8	7.5	7.8	7.7
5001 - 10000		21.8	23.2	20.6	19.7	30.8	29.8	18.8	22.1
10001 - 20000		25.5	36.7	52.4	28.2	25.6	31.9	29.4	30.1
20001 - 50000		28.3	24.7	14.3	23.2	7.7	19	27.9	25.2
50001 - 75000		3.9	4.5	3.2	4.2	2.6	3.3	4.3	4
75001 +		2.4	3.4	6.3	4.2	2.6	2.4	3.4	3.1
Not responded		8.3	3	-	14.8	17.9	6	8.4	7.7
Total	Percent	100	100	100	100	100	30.1	69.9	100
	Number	591	267	63	142	39	332	770	1102
Mean Income		20716.4	22324	23095.2	22010.6	14359	18771.1	22223.9	21183.7

Annex Table - 3.1
Educational Qualification of Household by Region, Pakistan, 2008

(Percent)

Educational qualification	Punjab	Sindh	Balochistan	NWFP	AJK/ FANA	Total
No education	13	17.4	20.6	6.6	5.5	13.8
Under matric	23.9	22.2	17	18.4	13.3	22
Matric/ Intermediate	33.4	27.8	28.3	38.2	20	31.4
Graduate and above	29.6	32.6	34	36.8	61.2	32.8

Annex Table - 3.2
Major Occupational Groups of Household Head by Gender, Pakistan, 2008

(Percent)

Major Occupational Group	Gender		Total
	Males	Females	
Senior management	4.4	5.2	4.5
Junior or mid-level professionals	14.8	25.7	16.5
Business	23.2	7.9	20.8
Service related workers	11.6	3.2	10.3
Office workers	19	11.3	17.7
Skilled worker	0.3	0.2	0.3
Non-skilled worker	6.5	2.3	5.8
Farmers cultivators	8.2	1.4	7.1
Persons not working	10.5	39.7	15.1
No response	1.7	3.2	1.9

Annex Table - 3.3
Major Occupational Groups of Head of Household by Region, Pakistan, 2008

(Percent)

Major Occupational Groups	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Total
Senior management	3.6	7.1	4.9	1.5	4.8	4.5
Junior or mid-level professionals	14.1	20.4	17.4	14.5	21.8	16.5
Business	21.6	18.4	23.9	23.2	17	20.8
Service related workers	9.2	12.6	9.7	10.3	6.1	10.3
Office workers	15.9	15.4	22.7	29.4	18.8	17.7
Skilled worker	0.3	0.2		0.4		0.3
Non-skilled worker	6.3	6.7	6.1	2.6	1.8	5.8
Farmers cultivators	9.5	6.2	5.3	1.3	2.4	7.1
Persons not working	16.6	12.6	10.1	15.6	21.8	15.1
No response	2.9	0.5		1.1	5.5	1.9

Annex Table 3.4
Family Size of Household head by Region, Pakistan, 2008

(Percent)

Background characteristics		Punjab	Sindh	Balochistan	NWFP	AJK/ FANA	Total
Family size	< 3	2.5	2.3	0.4	2.5	3.6	2.4
	03 – 06	39.5	34.2	19.9	34.5	30.9	35.9
	07 – 10	48.1	49.8	45.1	47.1	57	48.7
	11+	9.9	13.7	34.6	15.9	8.5	13.1
Total		100	100	100	100	100	100
Mean family size		7.2	7.7	9.6	7.8	7.3	7.6

Annex Table - 3.5
Family Size of Household head by Sex, Pakistan, 2008

(Percent)

Family size		Male	Female	Total
	< 3	2.2	3.4	2.4
	03-06	33.1	50.2	35.9
	07-10	50.6	38.6	48.7
	11+	14.1	7.8	13.1
Total	Percent	100	100	100
	Number	3423	655	4078
Mean Family size		7.7	6.7	7.6

Annex Table - 3.6
Educational Qualification of Household Family by Region, Pakistan, 2008

(Percent)

Background characteristics		Punjab	Sindh	Balochistan	NWFP	AJK/ FANA	Total
Educational qualification	No education	7.8	8.4	9.7	6.6	7.6	8.1
	Under matric	7.8	7.8	10.5	7.5	8.1	7.9
	Matric/ Intermediate	7.2	7.7	10	8.5	7	7.6
	Graduate and above	29.6	32.6	34	36.8	61.2	32.8
Mean		7.2	7.7	9.6	7.8	7.3	7.6

Annex Table -3.7
Types of Phones used by Households, by Residence and Region, Pakistan, 2008

(Percent)

Types of Phones used	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Fixed Land Line (FLL)	44	36.9	44.9	67.8	32.1	35.3	49.5	44.1	1813
Wireless Local Loop (WLL)	10	9.3	15.4	15.4	3.6	8.3	11.7	10.4	429
Mobile	90.7	92.7	95.5	92.3	93.9	89.6	93.3	91.9	3779
At-least one facility use	95.6	95.2	99.6	97.8	97	94.2	97.1	95.9	3948
None	3.7	3.7	0.4	1.8	1.8	5.1	2	3.2	131
No response	0.8	1.1	-	0.4	1.2	0.8	0.9	0.8	34

Annex Table - 3.8
Types of Phones used by Households by Sex, Pakistan, 2008

(Percent)

Type	Males	Females	Total	
			Percent	Number
Fixed Land Line (FLL)	42.6	52.1	44.1	1813
Wireless Local Loop (WLL)	10.8	8.7	10.4	429
Mobile	92.2	90.4	91.9	3779
At-least one facility use	95.7	97.3	96	3948
None	3.4	2	3.2	131
No response	0.8	0.8	0.8	34

Annex Table - 3.9
Types of facility used for Phone if Households want to phone someone by Residence and Region, Pakistan, 2008

(Percent)

Type of facility used	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
PCO / Payphone	41.7	74.4	23.5	63.4	43.6	54.4	51.8	52.8	2171
Neighbours	8.5	7.3	4	12.5	8.5	9.1	7.8	8.3	343
Relatives/ friends	13	13.3	1.6	11.4	7.9	15.3	10	12	494
Office	9.7	10.1	1.2	9.4		6.7	10.2	8.9	365
At least one facility	59.4	88.3	26.3	76.3	56.4	69.2	66.8	67.7	2786
No response	40.6	11.7	73.7	23.7	43.6	30.8	33.2	32.3	1327

Annex Table - 3.10
Types of facility used for Phone if want to phone someone, by Households, by Sex, Pakistan, 2008

(Percent)

Type	Males	Females	Total	
			Percent	Number
PCO/ Payphone	53.5	49	52.8	2171
Neighbours	7.1	14.6	8.3	343
Relatives/friends	12.1	11.7	12	494
Office	9.1	7.8	8.9	365
At-least one facility	67.4	69.4	67.7	2786
No response	32.6	30.6	32.3	1327

Annex Table - 3.11
Households planning to have phones, by Residence and Region, Pakistan, 2008

(Percent)

Type	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
FLL	12.5	16.1	7.7	23	7.9	12.2	15.6	14.3	587
WLL	4.7	9.6	4	15.1	1.8	6.9	7.3	7.2	295
Mobile	34.6	50.5	16.2	32.9	46.1	36	40	38.5	1583
At least one facility	42.8	64	20.2	55.9	55.8	48.2	50.6	49.7	2044
None	7.1	12.6	1.6	8.6	0.6	9.8	7.4	8.3	342
No response	50.1	23.3	78.1	35.5	43.6	42.1	41.9	42	1727

Annex Table - 3.12
Households planning to have phones, by Sex, Pakistan, 2008

(Percent)

Type	Males	Females	Total	
			Percent	Number
FLL	14	15.5	14.3	587
WLL	7.1	7.8	7.2	295
Mobile	38.5	38.4	38.5	1583
At-least one facility	49.6	50.2	49.7	2044
None	8.6	7	8.3	342
No response	41.8	42.8	42	1727

Annex Table - 3.13
Household's reasons for not having FLL/WLL by Residence and Region, Pakistan, 2008

(Percent)

Reasons	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Major Urban	Other Urban	Total	
									Percent	Number
Facility not available	4.8	5.3	2	6.8	13.9	9.4	2.6	9.1	5.4	222
Cannot afford	15.6	15.7	16.6	13.8	11.5	18.1	13.7	12.7	15.3	631
Have no use of it	29.3	37.1	19	5.5	10.3	29.4	25.7	43.6	27.6	1135
Find it complicated	2.6	1	0.4	0.9	1.2	2.1	1.6		1.7	71
No response	51.1	42.5	62.3	75.7	64.2	45.2	57.8	38.2	52.5	2158

Annex Table - 3.14
Household's reasons for not having FLL / WLL by Sex, Pakistan, 2008

(Percent)

Reasons	Males	Females	Total	
			Percent	Number
Facility not available	5.5	4.7	5.4	222
Cannot afford	16.1	11.4	15.3	631
Have no use of it	28.6	22.4	27.6	1135
Find it complicated	1.5	2.9	1.7	71
No response	50.9	60.9	52.5	2158

Annex Table - 3.15
Household's reasons for not having Mobile Phone by Residence and Region, Pakistan, 2008

(Percent)

Reasons	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Major Urban	Other Urban	Total	
									Percent	Number
Facility not available	0.5	0.1	0.4	2.9	0.6	1.1	0.3	0.9	0.6	26
Cannot afford	6.9	4.2	2	5.7	3	7.1	4.4	7.3	5.5	226
Have no use of it	4.9	3	1.2	2.4	3	3.9	3.5	5.5	3.7	154
Find it complicated	1	-	0.4	1.5	-	1	0.5	0.9	0.7	28
No response	87	93.2	96	91.4	93.3	88.1	91.6	86.4	90.1	3707

Annex Table - 3.16
Household's reasons for not having Mobile phone by Sex, Pakistan, 2008

(Percent)

Reasons	Males	Females	Total	
			Percent	Number
Facility not available	0.7	0.5	0.6	26
Cannot afford	5.9	3.5	5.5	226
Have no use of it	3.6	4.4	3.7	154
Find it complicated	0.7	0.8	0.7	28
No response	89.9	91.3	90.1	3707

Annex Table - 3.17
Household's reasons for not having Internet by Residence and Region, Pakistan, 2008

(Percent)

Reasons	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Major Urban	Other Urban	Total	
									Percent	Number
Facility not available	7.4	3.6	10.9	10.3	9.1	11.1	3.7	16.4	6.9	284
Cannot afford	11.7	14.6	13	23.2	6.7	16.3	12	15.5	13.7	565
Have no use of it	43.9	43.4	32.4	22.1	6.7	43.8	35.8	46.4	39.1	1610
Find it complicated	12.8	13.7	2.8	14.3	4.2	15	10.6	10.9	12.3	505
No response	35.6	28	44.1	48.9	73.9	28.1	43.2	22.7	36.9	1517

Annex Table - 3.18
Household's reasons for not having Internet by Sex, Pakistan, 2008

(Percent)

Reasons	Males	Females	Total	
			Percent	Number
Facility not available	7.1	5.9	6.9	284
Cannot afford	14.1	11.9	13.7	565
Have no use of it	40.9	29.8	39.1	1610
Find it complicated	12.8	9.6	12.3	505
No response	34.8	47.6	36.9	1517

Annex Table - 3.19
Purpose for using FLL / WLL by Residence and Region, Pakistan, 2008

(Percent)

Purpose of use	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Business	24.9	22.1	24.3	44.7	17.6	23.5	27.5	25.9	1067
Family matters	44.6	38.8	48.6	69.3	40	37.2	50.9	45.7	1878
Social contact / work	37.4	32.5	40.9	57.5	24.8	32.3	41.4	37.9	1558
News / sports	8.1	11.2	2	14	5.5	7.9	10	9.2	378
Education	17.6	19	7.3	33.3	5.5	14.1	21.5	18.7	768
Health / medical	20.3	23.9	29.6	61	17.6	21.3	29.4	26.3	1083
Shopping	15.9	15.4	17	45.8	19.4	17.4	20.4	19.3	792
Office work	20.9	19.9	25.5	41.2	21.2	16.3	27.3	23.1	951
Farm management	8.5	6	6.1	28.3	13.9	11.9	8.9	10	413
Live Stock management	7.4	4	4.5	24.3	15.2	10.3	7.2	8.4	345

Annex Table - 3.20
Purpose for using FLL / WLL by Sex, Pakistan, 2008

(Percent)

Purpose of use	Males	Females	Total	
			Percent	Number
Business	27.1	19.6	25.9	1067
Family matters	44.1	53.7	45.7	1878
Social contact / work	37.3	40.9	37.9	1558
News / sports	9.1	9.4	9.2	378
Education	17.8	23.1	18.7	768
Health / medical	26	28	26.3	1083
Shopping	19.6	17.2	19.3	792
Office work	23.2	22.7	23.1	951
Farm management	10.2	9	10	413
Live Stock management	8.4	8.2	8.4	345

Annex Table - 3.21
Purpose for using Mobile phone by Residence and Region, Pakistan, 2008

(Percent)

Purpose of use	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Business	56.2	53.4	57.1	54.4	46.7	54.3	55.1	54.8	2255
Family matters	80.9	89.2	85.4	85.3	57.6	82.5	83.5	83.2	3420
Social contact / work	77.6	75.6	78.5	71.3	63.6	75.2	76.1	75.8	3117
News / sports	23.4	28	4.9	47.1	24.2	25.5	26.9	26.3	1083
Education	33.3	35.6	23.5	51.8	30.9	31.3	37.9	35.4	1455
Health / medical	41.6	47.8	49	69.3	38.8	44.6	48.2	46.8	1926
Shopping	38.9	40.6	42.5	54.4	43	42	41.2	41.5	1708
Office work	35	40.1	46.2	41	27.9	29.6	42.5	37.6	1545
Farm management	20.5	19.7	11.7	29.6	20.6	27.8	16.4	20.8	854
Live Stock management	18.5	11.7	8.5	26.5	20.6	24.7	12.1	16.9	694

Annex Table - 3.22
Purpose for using Mobile phone by Sex, Pakistan, 2008

(Percent)

Purpose of use	Males	Females	Total	
			Percent	Number
Business	57.7	39.7	54.8	2255
Family matters	84.5	76	83.2	3420

Social contact/work	78.2	63.3	75.8	3117
News / sports	27.7	19.3	26.3	1083
Education	35.3	35.6	35.4	1455
Health / medical	47.7	42.2	46.8	1926
Shopping	44.3	27.1	41.5	1708
Office work	38	35.2	37.6	1545
Farm management	22.5	11.6	20.8	854
Live Stock management	18.2	9.7	16.9	694

Annex Table - 3.23
Purpose for using Internet Services by Residence and Region, Pakistan, 2008

(Percent)

Purpose of use	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Business	5.1	4.8	0.4	13.4	6.1	3.4	7.1	5.7	234
Family matters	4.4	8	-	12.1	3.6	3.5	7.6	6	248
Social contact / work	8.4	8	2	14.5	4.2	5.5	10.2	8.4	346
News / sports	16.2	7.5	15.8	30.5	35.2	11.4	18.7	15.9	656
Education	18.3	7.9	18.2	32.2	40.6	12.5	20.8	17.6	725
Health / medical	6	3	3.2	11.2	7.9	4.3	6.4	5.6	230
Shopping	4.6	2.4	3.6	11.4	5.5	2.7	5.9	4.7	192
Office work	7.6	4.8	6.5	16.2	10.9	4.3	10	7.8	321
Farm management	2.3	0.8	0.4	1.5	6.7	1.1	2.2	1.8	75
Live Stock management	1.4	0.4	0.4	2	3	1.1	1.3	1.2	49

Annex Table - 3.24
Purpose for using Internet services by Sex, Pakistan, 2008

(Percent)

Purpose of use	Males	Females	Total	
			Percent	Number
Business	5.8	5.2	5.7	234
Family matters	5.9	6.5	6	248
Social contact / work	8.4	8.7	8.4	346
News / sports	15.3	19.2	15.9	656
Education	16.6	22.8	17.6	725
Health / medical	5.1	8.2	5.6	230
Shopping	4.5	5.5	4.7	192
Office work	7.6	8.7	7.8	321
Farm management	1.4	3.8	1.8	75
Live Stock management	1	2	.2	49

Annex Table - 3.25
Purpose for using PCO / Payphone by Residence and Region, Pakistan, 2008

(Percent)

Purpose of use	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Business	7.2	2.1	5.3	20.4	1.8	9	5.5	6.8	281
Family matters	11.3	5.3	6.1	21.3	3	13.3	7.9	10	411
Social contact / work	9.7	3	4	14.5	3.6	10.5	5.9	7.7	315
News / sports	1.8	0.2	0.4	8.1		1.8	1.9	1.8	76
Education	2.6	0.4	0.8	10.1	0.6	3	2.3	2.6	106
Health / medical	2.8	0.6	2	13.6	3	3.7	3	3.3	136
Shopping	3	0.6	1.6	14.9	0.6	4.3	2.9	3.4	141
Office work	3	0.2	-	9.9		3	2.4	2.7	109
Farm management	3.7	1.5	-	10.3	2.4	5.3	2.3	3.5	143
Live Stock management	4	0.8	-	11.4	2.4	5.3	2.5	3.6	147

Annex Table - 3.26
Purpose for using PCO / Payphone by Sex, Pakistan, 2008

(Percent)

Purpose of use	Males	Females	Total	
			Percent	Number
Business	7.7	2.4	6.8	281
Family matters	10.6	6.7	10	411
Social contact / work	8.1	5.2	7.7	315
News / sports	2	0.9	1.8	76
Education	2.6	2.3	2.6	106
Health / medical	3.5	2.1	3.3	136
Shopping	3.8	1.7	3.4	141
Office work	2.8	2	2.7	109
Farm management	3.7	2.3	3.5	143
Live Stock management	3.9	2	3.6	147

Annex Table - 3.27
Household reporting Time Taken by Company to Restore Phone, by Residence and Region, Pakistan, 2008

(Percent)

Restoration Time		Punjab	Sindh	Balochistan	NWFP	AJK/ FANA	Rural	Urban	Total
Same day (within a day)		24.3	27.5	28.4	5.8	27.7	25.9	21.9	23.4
Within 2 - days		35.7	30.9	27.3	38.1	36.5	31.4	35.9	34.2
3 - 6 days		23.9	18.1	23.3	37.3	13.1	21.2	24.7	23.4
Within two weeks		9.1	7.7	11.9	9.7	13.9	8.1	9.7	9.1
One month or more		7	15.7	9.1	9.1	8.8	13.4	7.8	9.8
Total	Percent	100	100	100	100	100	36.4	63.6	100
	Number	1545	832	176	362	137	1111	1941	3052
Mean		4.2	6.1	4.3	6.1	7.1	5.8	4.7	5.1

Annex Table - 3.28
Household reporting Time Taken by Company to Restore Phone, by Sex, Pakistan, 2008

(Percent)

Restoration Time		Males	Females	Total
Same day (within a day)		24.5	17.6	23.4
Within 2-days		34.2	34.6	34.2
3-6 days		23.1	24.8	23.4
Within two weeks		8.3	13.1	9.1
One month or more		9.8	10	9.8
Total	Percent	100	100	100
	Number	2540	512	3052
Mean		4.9	5.8	5.1

Annex Table - 3.29
Place of Purchase of Mobile Phone by Residence and Region, Pakistan, 2008

(Percent)

Place of Purchase	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Authorised dealer	39.7	25.4	26.7	48.2	58.8	31.3	39.6	36.4	1497
Any shop	57.2	67.8	72.1	50.9	36.4	64	57	59.7	2455
From both	0.1	0.5	0.4	3.5		0.7	0.6	0.6	26
No response	3.3	7.3	1.6	4.4	4.8	5.4	4	4.5	187

Annex Table - 3.30
Households intended Place of Purchase of Mobile Phone by Sex, Pakistan, 2008

(Percent)

Place of Purchase	Males	Females	Total	
			Percent	Number
Authorised dealer	34.2	47.9	36.4	1497
Any shop	62	47.6	59.7	2455
From both	0.7	0.2	0.6	26
No response	4.5	4.6	4.5	187

Annex Table - 3.31
Household intended price to buy Mobile Phone by Residence and Region, Pakistan, 2008

(Percent)

Price would like to spend on mobile (in Rupees)		Punjab	Sindh	Balochistan	NWFP	AJK/ FANA	Rural	Urban	Total
< 1000		1.8	1.6	0.4	0.4	2.4	2.7	0.8	1.5
1000-2500		23.7	34.1	23.9	18.9	26.1	31.5	23.1	26.3
2501-3500		19.4	17.9	16.2	16.2	21.2	19.3	18	18.5
3501-5000		25	17.5	35.6	25	18.2	21.8	23.9	23.1
5001-10000		20.6	17.8	21.1	20.2	22.4	17	21.6	19.8
10001-20000		4.2	6	0.4	2.4	4.8	2.3	5.6	4.3
20001+		1.1	1.2	1.2	0.7	1.2	0.6	1.5	1.1
No response		4.2	3.9	1.2	16.2	3.6	5	5.5	5.3
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113
Mean		5065.8	4751.9	4693.9	4931.9	5067	4174.3	5411.8	4935.4

Annex Table - 3.32
Households intended Price to Buy Mobile Phone by Sex, Pakistan, 2008

(Percent)

Price would like to spend on mobile (in Rs.)		Males	Females	Total
< 1000		1.6	0.9	1.5
1000-2500		28.1	17	26.3
2501-3500		18.9	16.1	18.5
3501-5000		22.4	26.9	23.1
5001-10000		18.5	26.5	19.8
10001-20000		4	5.9	4.3
20001+		1.1	1.4	1.1
No response		5.3	5.2	5.3
Total	Percent	100	100	100
	Number	3456	657	4113
Mean		4755.5	5883.4	4935.4

Annex Table - 3.33
Brand of Mobile used by Households by Residence and Region, Pakistan, 2008

(Percent)

Brand of Mobile Phone used	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Nokia	55.9	58.7	61.5	66.7	69.1	56.4	60.3	58.8	2418
Sony Erickson	13.2	13.8	14.2	11.6	9.7	11.9	13.9	13.1	540
Motorola	10.2	9.9	5.3	8.3	7.3	8.9	9.9	9.5	391
Samsung	12.3	15.7	19.4	12.9	9.7	13	14.1	13.7	564
Blackberry	2.2	1.6	-	1.1	0.6	1.3	1.9	1.7	70
LG	8.5	10.3	20.2	10.5	3	9.2	10.1	9.7	401
Chinese origin	3.7	2.9	2	10.7	1.2	3.6	4.3	4	166
Siemens	1.9	1.1	-	1.1	1.2	1.5	1.3	1.4	58
Others	0.3	0.2	-	0.4		0.3	0.3	0.3	12
At least one set	94.4	95.3	96.8	96.9	95.8	93.6	96.1	95.2	3914
No response	5.7	4.8	3.2	3.1	4.2	6.6	3.9	5	204

Annex Table - 3.34
Brand of Mobile Phone used by Households by Sex, Pakistan, 2008

(Percent)

Brand of Mobile Phone used	Males	Females	Total	
			Percent	Number
Nokia	59.2	56.6	58.8	2418
Sony Erickson	13	13.7	13.1	540
Motorola	9.5	9.4	9.5	391
Samsung	13.2	16.6	13.7	564
Blackberry	1.7	1.8	1.7	70
LG	9.7	9.9	9.7	401
Chinese origin	4.2	3	4	166
Siemens	1.4	1.7	1.4	58
Others	0.3	0.2	0.3	12
At-least one set	95.4	94.1	95.2	3914
No response	4.8	5.9	5	204

Annex Table - 3.35
Family Member having Mobile Phone, by Residence and Region, Pakistan, 2008,

(Percent)

Family members having Mobile phones		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Males									
No		12.4	5.7	5.7	7.7	6.1	10.8	8.3	9.3
1		32.8	47.8	27.1	23	20.6	38	33.6	35.3
2-3		46.2	39.6	50.2	45.4	56.4	42.5	46.2	44.8
4-5		6.9	5.3	15.4	15.6	13.3	6.8	9	8.1
6+		1.7	1.6	1.6	8.3	3.6	1.9	2.8	2.5
Females									
No		45.4	39.6	58.7	53.7	33.9	54.8	38.8	45
1		36.3	41.4	29.6	23.5	31.5	34.2	36.7	35.8
2-3		16.3	16.6	11.3	18.6	31.5	9.8	21.4	17
4-5		1.1	1.9	0.4	2.6	3	0.9	1.9	1.5
6+		0.8	0.6		1.5		0.2	1.1	0.8
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113
Mean Males member		1.8	1.7	2.2	2.7	2.4	1.8	2	1.9
Mean Females member		0.8	0.9	0.6	0.9	1.2	0.6	1	0.9

Annex Table - 3.36
Family Member having Mobile Phone by Sex, Pakistan, 2008

(Percent)

Family members having Mobile phones		Males	Females	Total
Males				
No response		9.4	8.7	9.3
1		35.2	35.8	35.3
2-3		44.4	46.9	44.8
4-5		8.3	7.5	8.1
6+		2.7	1.2	2.5
Females				
No response		49.5	21.2	45
1		34.3	43.8	35.8
2-3		14.2	31.7	17
4-5		1.4	2.3	1.5
6+		0.7	1.1	0.8
Total	Percent	100	100	100
	Number	3456	657	4113
Mean Males member		2	1.9	1.9
Mean Females member		0.8	1.3	0.9

Annex Table - 3.37
Monthly Household Expenditure on Telecom Services by Residence and Region, Pakistan, 2008

(Percent)

Monthly expenditure	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Fixed line/WLL								
Upto Rs. 250	17.4	23.5	36.4	19.8	16.7	21.9	19.7	20.4
251 – 500	30.3	40.7	42.1	28.2	26.9	36.3	31.5	33
501 – 1000	30	24.7	12.4	33.1	24.4	31.1	26.6	28
1000 +	22.3	11.1	9.1	18.9	32.1	10.6	22.2	18.6
Mobile phone								
Upto Rs. 250	17.1	20.2	9	26.8	13.3	21.4	16.7	18.4
251 – 500	35.5	37.2	42.1	26.3	38.5	40.2	32.7	35.5
501 – 1000	24.7	23.5	33.9	24.1	23.7	23.2	25.9	24.8
1000 +	22.7	19.1	15	22.8	24.4	15.2	24.8	21.2
Internet								
Upto Rs. 250	57	42	70	45.5	60	62.6	49.9	53.7
251 – 500	21.5	33	26	35.2	25	23.9	27.2	26.2
501 – 1000	17.1	20.5	4	14.5	7.5	11.7	17.4	15.7
1000 +	4.4	4.5		4.8	7.5	1.7	5.5	4.4
Calling card								
Upto Rs. 250	65.8	46.7	41.2	51.6	32.3	62.1	53.4	56.6
251 – 500	20.8	35.6	52.9	35.9	35.5	26	30.4	28.8
501 – 1000	8.7	6.7		7	16.1	8.3	8.1	8.2
1000 +	4.8	11.1	5.9	5.5	16.1	3.6	8.1	6.4
Total Percent	100	100	100	100	100	37.4	62.6	100
Total Number	231	45	17	128	31	169	283	452

Annex Table - 3.38
Monthly Household Expenditure on Telecom Services by Sex, Pakistan, 2008

(Percent)

Monthly expenditure	Males	Females	Total
Fixed line / WLL			
Upto Rs. 250	21.2	16.9	20.4
251 – 500	34.3	27.4	33
501 – 1000	27.9	28.2	28
1000 +	16.6	27.4	18.6
Mobile phone			
Upto Rs. 250	18.1	20.3	18.4
251 – 500	35.5	35.4	35.5
501 – 1000	25.5	21.5	24.8
1000 +	20.9	22.8	21.2
Internet			
Upto Rs. 250	52.5	59	53.7
251 - 500	27.7	19.4	26.2
501 - 1000	15.3	18	15.7
1000 +	4.6	3.6	4.4
Calling card			
Upto Rs. 250	55.8	61.1	56.6
251 - 500	30	22.2	28.8
501 - 1000	7.9	9.7	8.2
1000 +	6.3	6.9	6.4
Total (Percent)	100	100	100
Total (Number)	380	72	452

Annex Table - 3.39
Use of FLL other than Calls by Residence and Region, Pakistan, 2008

(Percent)

Other use of FLL	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Time	27.6	7.4	15	24.8	33.9	19.3	21.7	20.8	856
Fax	3.5	3	3.2	5	4.8	2.7	4.1	3.5	146
Alarm	32.7	14.3	27.1	36.6	61.2	27.6	29.1	28.5	1172
Internet	15.2	6.7	11.3	29.6	18.2	10.9	16.2	14.2	582
Voice mail	1.9	3	3.6	5.9	7.9	2.9	3.1	3	125
No response	44.2	79.2	60.7	42.5	19.4	57.2	52.6	54.4	2236

Annex Table - 3.40
Use of FLL other than Calls by Sex, Pakistan, 2008

(Percent)

Other use of FLL	Males	Females	Total	
			Percent	Number
Time	20.3	23.4	20.8	856
Fax	3.8	2.4	3.5	146
Alarm	26.9	36.8	28.5	1172
Internet	13.8	16	14.2	582
Voice mail	3	3.2	3	125
No response	55.7	47.5	54.4	2236

Annex Table - 3.41
Households use of WLL other than Calls by Residence and Region, Pakistan, 2008

(Percent)

Other use of WLL	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
None	37.4	22.3	42.1	31.4	50.3	30.2	34.8	33.1	1360
SMS	9.1	7.1	6.5	8.8	24.2	5.6	11	8.9	368
MMS	2.7	2.4	1.2	2.2	4.8	1.2	3.4	2.6	105
Calculator	4.9	4.8	3.2	3.7	16.4	3.2	6.3	5.1	210
Calendar	3.9	4.7	3.6	3.5	10.3	2.7	5.4	4.4	179
Songs	2.8	4.6	2.4	3.1	10.9	2.3	4.5	3.7	151
Radio	3.9	4.7	0.8	2.6	9.7	2.7	4.9	4	166
Alarm	7.4	6	4	4.2	18.2	4.8	8.2	6.9	283
Camera	1.8	1.7	1.2	1.3	9.1	0.9	2.6	2	81
Internet	3.1	3.4	6.5	4.6	6.1	3.1	4	3.7	151
Game/Entertainment	3.4	3.2	0.8	1.3	11.5	2.3	3.9	3.3	134
Fax	0.6	0.9	0.8	0.4	1.8	0.4	0.9	0.8	31
Other value added services	1.8	0.6	1.6	0.2		1.6	0.9	1.2	49
No response	44.5	66.4	47	56.1	12.7	56.7	47.7	51.2	2104

Annex Table - 3.42
Households Use of WLL other than Calls by Sex, Pakistan, 2008

(Percent)

Other use of WLL	Males	Females	Total	
			Percent	Number
None	31.4	41.7	33.1	1360
SMS	8.5	11.4	8.9	368
MMS	2.4	3.2	2.6	105
Calculator	4.7	7.2	5.1	210
Calendar	4.2	5.2	4.4	179
Songs	3.3	5.8	3.7	151
Radio	3.7	5.8	4	166
Alarm	6.5	8.8	6.9	283
Camera	1.7	3.5	2	81
Internet	3.8	3	3.7	151

Game / Entertainment	3.2	3.8	3.3	134
Fax	0.8	0.8	0.8	31
Other value added services	1.2	1.1	1.2	49
No response	53.3	39.9	51.2	2104

Annex Table - 3.43
Households Use of Mobile Phone other than Calls by Residence and Region, Pakistan, 2008

(Percent)

Other use of Mobile Phone	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
None	19.2	11.4	23.9	9.2	9.7	17.9	14.3	15.7	645
SMS	53.5	64.8	64.4	78.7	76.4	53.4	66	61.2	2518
MMS	10.2	11.8	8.5	26.5	17.6	9.3	14.8	12.7	522
Calendar	32.8	38.2	27.1	46.9	35.8	31.9	38.1	35.7	1470
Songs	25	40	23.5	40.6	39.4	27.6	34.1	31.7	1302
Radio	27.1	45.2	24.7	48	37	31.6	37.1	35	1440
Alarm	47.1	56.5	47.8	64.9	53.3	47.9	54.8	52.2	2145
Camera	25.3	31.6	25.1	48	35.2	24.5	33.6	30.1	1237
Internet-GPRS / EDGE	5.6	6.1	3.2	10.5	11.5	3.8	8	6.4	262
Game / Entertainment	22.6	28.9	32.8	37.1	38.8	22.7	30.2	27.3	1124
Fax	1.5	4.4	0.4	3.1	1.2	1.9	2.8	2.4	100
Computer (PDA)	1.5	1.8		1.8	2.4	1.2	1.8	1.6	64
TV viewing	1.1	0.2	0.8	0.2	2.4	1.1	0.6	0.8	32
Other value added services	1.4	0.2	1.6	0.7	10.9	1.7	1.2	1.4	56
No response	0.3	0.1	0.4	-	-	0.4	0.1	0.2	9

Annex Table - 3.44
Households use of Mobile Phone other than Calls by Sex, Pakistan, 2008

(Percent)

Other use of Mobile Phone	Males	Females	Total	
			Percent	Number
None	15.7	15.4	15.7	645
SMS	60.2	66.5	61.2	2518
MMS	12.7	12.6	12.7	522
Calendar	36.5	31.8	35.7	1470
Songs	31.3	33.3	31.7	1302
Radio	34.6	37.3	35	1440
Alarm	52.2	51.8	52.2	2145
Camera	30.1	30.1	30.1	1237
Internet - GPRS / EDGE	6.3	6.7	6.4	262
Game / Entertainment	27.3	27.2	27.3	1124
Fax	2.2	3.5	2.4	100

Computer (PDA)	1.5	1.7	1.6	64
TV viewing	0.8	0.8	0.8	32
Other value added services	1.2	2	1.4	56
No response	0.2	0.5	0.2	9

Annex Table - 3.45
Number of Calls Made / Received on FLL / WLL by Residence and Region, Pakistan, 2008

(Percent)

Number of Calls		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Made									
No response		48.9	57	50.2	21.1	47.3	59	41.6	48.2
1 - 10		37.1	33.6	42.5	60.3	36.4	32.8	42.7	38.9
11 - 20		10.3	6.4	4.9	13.4	9.7	6.2	10.9	9.1
21 - 50		3.5	3	2.4	4.6	6.7	1.9	4.5	3.5
51+		0.2	0.1		0.7		0.1	0.3	0.2
Received									
No response		49.6	57.1	49.8	21.5	50.3	59.1	42.3	48.7
1 - 10		31.5	28.7	37.2	51.1	26.1	28.4	35.8	32.9
11 - 20		14	9.7	11.3	20.6	15.2	9.4	15.8	13.3
21 - 50		4.6	4.4	1.6	5.9	7.9	3	5.7	4.6
51+		0.4	0.2	-	0.9	0.6	0.1	0.5	0.4
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113
Mean calls Made		5.3	3.9	4.3	8.1	6.6	3.6	6.1	5.2
Mean calls received		6.1	4.7	4.6	9.1	7.9	4.3	7.1	6

Annex Table - 3.46
Number of Calls Made / Received on FLL / WLL by Sex, Pakistan, 2008

(Percent)

Number of Calls		Males	Females	Total
Made				
No response		50.4	36.5	48.2
1-10		37	48.9	38.9
11-20		8.8	11.1	9.1
21-50		3.5	3.3	3.5
51+		0.2	0.2	0.2
Received				
No response		50.7	38.2	48.7
1-10		31.5	40.8	32.9
11-20		12.8	16.1	13.3
21-50		4.7	4.3	4.6
51+		0.3	0.6	0.4
Total	Percent	100	100	100
	Number	3456	657	4113
Mean calls Made		5	5.9	5.2
Mean calls received		5.8	7	6

Annex Table - 3.47
Number of Calls Made / Received on Mobile Phone by Residence and Region, Pakistan, 2008

(Percent)

Number of Calls		Punjab	Sindh	Balochistan	NWFP	AJK/ FANA	Rural	Urban	Total
Made									
No response		10	7.2	5.3	21.3	15.8	11.9	9.4	10.4
1-10		64.2	64	64	48.9	55.8	63.4	61.3	62.1
11-20		16.7	20.1	24.3	21.3	19.4	18.9	18.7	18.8
21-50		8.5	8.2	6.5	7.9	8.5	5.5	9.9	8.2
51+		0.6	0.4		0.7	0.6	0.3	0.7	0.5
Received									
No response		10.3	7.1	5.3	21.5	14.5	11.9	9.5	10.5
1-10		54.9	57.5	61.5	41.9	46.7	54.5	54.1	54.3
11-20		21.4	23.1	23.9	23.5	26.7	23.3	22	22.5
21-50		12.1	11.6	8.1	11.8	10.9	9.6	12.9	11.6
51+		1.3	0.8	1.2	1.3	1.2	0.7	1.5	1.2
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113
Mean calls Made		9.7	9.2	9.9	10.1	10.1	8.6	10.3	9.6
Mean calls received		11.8	11	10.9	11.7	12	10.5	12.1	11.5

Annex Table - 3.48
Number of Calls Made / Received on Mobile phone by Sex, Pakistan, 2008

(Percent)

Number of Calls		Males	Females	Total
Made				
No response		9.8	13.1	10.4
1-10		61.8	63.8	62.1
11-20		19.1	17.2	18.8
21-50		8.7	5.6	8.2
51+		0.5	0.3	0.5
Received				
No response		9.8	14.2	10.5
1-10		53.6	57.7	54.3
11-20		23	19.8	22.5
21-50		12.4	7.8	11.6
51+		1.3	0.6	1.2
Total	Percent	100	100	100
	Number	3456	657	4113
Mean calls Made		9.9	8.3	9.6
Mean calls received		11.9	9.4	11.5

Annex Table - 3.49
Number of Messages (SMS) Sent / Received by Residence and Region, Pakistan, 2008

(Percent)

Number of messages by family	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Sent								
No response	35.9	25.7	30.8	18	24.2	36.5	26.2	30.1
1-10	32.3	49.7	47.8	32.9	28.5	37.7	38.6	38.3
11-20	14.7	13.5	15.8	21.9	13.9	15.5	14.9	15.1
21-50	12.8	8.2	4	23.2	19.4	8.5	14.7	12.3
51+	4.4	3	1.6	3.9	13.9	1.8	5.6	4.1
Received								
No response	34.7	25.1	30.8	18.4	25.5	35.6	25.7	29.5
1-10	30.3	47	46.2	29.6	21.2	35.7	35.8	35.8
11-20	14.3	13.4	16.6	23.9	16.4	15.6	15.1	15.3
21-50	14	11.4	4	22.4	17.6	10.9	15.5	13.7
51+	6.7	3.1	2.4	5.7	19.4	2.3	7.9	5.8
Total (Percent)	100	100	100	100	100	38.3	61.7	100
Total (Number)	2027	1218	247	456	165	1574	2539	4113
Mean number of SMS sent	14.4	10.3	9.4	19	26.5	9.6	16.6	13.9
Mean number of SMS Received	17	11.9	9.7	20	31.8	10.8	19.2	16

Annex Table - 3.50
Number of Messages (SMS) Sent / Received by Sex, Pakistan, 2008

(Percent)

Number of messages by family	Males	Females	Total
Sent			
No response	31.7	21.8	30.1
1-10	37.5	42.2	38.3
11-20	15.2	14.6	15.1
21-50	12	14.3	12.3
51+	3.6	7.2	4.1
Received			
No response	31	21.3	29.5
1-10	35	39.7	35.8
11-20	15.2	15.8	15.3
21-50	13.7	13.7	13.7
51+	5.1	9.4	5.8
Total (Percent)	100	100	100
Total (Number)	3456	657	4113
Mean number of SMS sent	13	19	13.9
Mean number of SMS Received	14.8	22.2	16

Annex Table - 3.51
Language used for SMS by Residence and Region, Pakistan, 2008

(Percent)

Language used		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Urdu		20.9	28.6	53	33.3	23	27.4	26	26.6
English		26.7	25.1	17.8	37.1	47.9	20.6	32.1	27.7
Roman Urdu		21.3	22.2	1.2	12.7	15.8	19.6	18.9	19.2
Others		1.6	1.7	1.6	1.3		2.1	1.2	1.6
No response		29.5	22.4	26.3	15.6	13.3	30.3	21.7	25
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113

Annex Table - 3.52
Language used for SMS by Sex, Pakistan, 2008

(Percent)

Language used		Males	Females	Total
Urdu		27.5	21.9	26.6
English		25.9	37.1	27.7
Roman Urdu		18.2	24.4	19.2
Others		1.5	1.7	1.6
No response		26.9	14.9	25
Total	Percent	100	100	100
	Number	3456	657	4113

Annex Table - 3.53
Purpose of sending / receiving SMS by Residence and Region, Pakistan, 2008

(Percent)

Purpose of SMS	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Business	14	20.2	21.9	31.4	8.5	243	497	18	740
Personal	45.4	65.2	61.5	64.5	43.6	762	1471	54.3	2233
Family	37.5	45.7	42.1	45.6	26.1	576	1096	40.7	1672
Social	8	10.4	7.3	20.8	13.9	124	301	10.3	425
Education	18.4	19	18.2	37.9	44.8	275	621	21.8	896
News	4.1	9.4	8.1	18	12.1	89	231	7.8	320
Sports	4	10.5	4.9	24.3	7.9	126	220	8.4	346
Others	9.4	16.3	27.5	25	2.4	153	421	14	574
No response	37.7	27.3	30	16.2	24.2	594	692	31.3	1286

Annex Table - 3.54
Purpose of sending / receiving SMS by Sex, Pakistan, 2008

(Percent)

Purpose of SMS	Males	Females	Total	
			Percent	Number
Business	19.5	9.9	18	740
Personal	53.3	59.5	54.3	2233
Family	41.4	36.8	40.7	1672
Social	10.6	8.7	10.3	425
Education	20.8	27.1	21.8	896
News	7.1	11.4	7.8	320
Sports	8.9	5.9	8.4	346
Others	14.6	10.8	14	574
No response	32.6	24	31.3	1286

Annex Table - 3.55
Ownership of Computer, Intention to have in future and Purchase price of Computer by Residence and Region, Pakistan, 2008

(Percent)

Responses about Computer		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Have personal computer									
No		61	70.4	63.2	48.5	40	73.5	54.4	61.7
Yes		39	29.6	36.8	51.5	60	26.5	45.6	38.3
Would like to have PC									
No		75.7	75.5	67.2	68	58.2	74.4	73.1	73.6
Yes		24.3	24.5	32.8	32	41.8	25.6	26.9	26.4
Want to pay for computer									
< Rs.5000		5.4	4.7	4	9.6	2.4	7.3	4.3	5.5
Rs.5000-10000		11.9	14.1	18.2	16.4	21.8	13.4	14.1	13.8
Rs.10001-25000		4.5	4.9	2	2.4	11.5	2.5	5.8	4.5
Rs.25001+		0.6	0.2		0.2	2.4	0.3	0.6	0.5
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113
Mean Price		7944.9	7150.8	8639.5	6780.1	11443.6	6465.1	8590.3	7832.8

Annex Table - 3.56
Ownership of Computer, Intention to have in future and Purchase price of Computer by Sex, Pakistan, 2008

(Percent)

Responses about Computer	Males	Females	Total
Have personal computer			
No	64.1	48.7	61.7
Yes	35.9	51.3	38.3
Would like to have PC			

No		74.1	70.8	73.6
Yes		25.9	29.2	26.4
Want to buy computer in future				
< Rs.5000		5.4	5.6	5.5
Rs.5000-10000		13.6	14.9	13.8
Rs.10001-25000		4.3	5.8	4.5
Rs.25001+		0.4	1.1	0.5
Total	Percent	100	100	100
	Number	3456	657	4113
Mean Price		7618.6	8818.9	7832.8

Annex Table - 3.57
Place of use of Internet by Residence and Region, Pakistan, 2008

(Percent)

Place of use	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Home	26.1	17.2	27.5	39.5	41.8	246	809	25.7	1055
Neighbours	1.1	0.7	0.8	0.2	0.6	9	27	0.9	36
Friend/relative	2.3	3.2	0.8	1.5	3	26	73	2.4	99
Office	8.2	7.2	10.9	11.4	2.4	75	263	8.2	338
Educational institutions	9.7	3.9	4.9	8.8	6.1	84	222	7.4	306
Net Cafe	9.5	6.8	6.1	16.2	33.9	134	286	10.2	420
Other	1	0.6	0.4	0.4	2.4	13	21	0.8	34
No response	58.6	74	58.7	46.3	26.7	1120	1369	60.5	2489

Annex Table - 3.58
Place of use of Internet by Sex, Pakistan, 2008

(Percent)

Place of use	Males	Females	Total	
			Percent	Number
Home	23.8	35.3	25.7	1055
Neighbours	0.7	1.8	0.9	36
Friend/relative	2.5	2	2.4	99
Office	8.2	8.4	8.2	338

Educational institutions	6.7	11.1	7.4	306
Net Cafe	10.4	9.1	10.2	420
Other	0.8	1.1	0.8	34
No response	62.8	48.2	60.5	2489

Annex Table - 3.59
Desire to have Internet at Home by Residence and Region, Pakistan, 2008

(Percent)

Like to have internet		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
No		76.3	81.4	71.3	67.1	50.9	78.6	73.5	75.4
Yes		23.7	18.6	28.7	32.9	49.1	21.4	26.5	24.6
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113

Annex Table - 3.60
Desire to have Internet at Home by Sex, Pakistan, 2008

(Percent)

Like to have internet		Males	Females	Total
No		76.3	70.8	75.4
Yes		23.7	29.2	24.6
Total	Percent	100	100	100
	Number	3456	657	4113

Annex Table - 3.61
Type of Internet connection by Residence and Region, Pakistan, 2008

(Percent)

Type of connection	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Dial-up	18.7	7.1	23.9	32.9	22.4	198	514	17.3	712
DSL / ADSL	6.1	2.1	2.4	5.5	6.1	48	143	4.6	191
Wireless / Broadband	4.5	4.3	8.9	8.3	7.9	57	160	5.3	217
Mobile (GPRS / EDGE)	3	1.6	0.8	2.9	9.7	30	82	2.7	112
Cable Broadband	4.8	6.7	1.6	5.9	7.3	37	186	5.4	223
No response	67.2	80.5	64.8	57.7	50.3	1242	1606	69.2	2848

Annex Table - 3.62
Type of Internet connection by Sex, Pakistan, 2008

(Percent)

Type of connection	Males	Females	Total	
			Percent	Number
Dial-up	16.5	21.6	17.3	712
DSL / ADSL	4.5	5.5	4.6	191
Wireless / Broadband	5.2	5.5	5.3	217
Mobile (GPRS / EDGE)	2.6	3.2	2.7	112
Cable Broadband	4.9	7.9	5.4	223
No response	70.9	60.3	69.2	2848

Annex Table - 3.63
Purpose of Internet use by Residence and Region, Pakistan, 2008

(Percent)

Purpose of use	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
E-mail	28.1	19.3	34.4	47.4	41.2	20.3	33.6	28.5	1174
Voice communication	6.5	3.4	3.6	13.8	10.9	4.6	7.5	6.4	263
News/Sports/ Entertainment	16	11.1	18.6	30.7	23	13	18.9	16.6	684
Employment help	11.7	9.4	11.3	23.5	12.1	9.8	13.9	12.4	508
Office work	9.2	8.9	24.7	15.1	7.3	6.9	13	10.6	438
Business/ trade	4.9	5.7	7.3	14	3.6	4.2	7.6	6.3	258
Travel booking	3.7	2.6	4.5	5.3	4.2	2.7	4.2	3.6	150
Studies / Education	22.8	12.2	25.5	32.9	50.3	16.9	25.2	22	906
Watching movies	6.3	4.4	2	12.9	6.7	4.4	7.4	6.2	257
Chatting	9.5	9.4	12.1	16.9	13.9	8	12.3	10.6	438
Banking	2.3	3	0.8	3.7	3.6	1.8	3.2	2.6	108
Health/ Medical	2.9	3	5.3	6.1	5.5	2.4	4.3	3.5	145
Online shopping	1.5	2	3.2	5	3	1	3	2.2	91
Games	5.5	5.3	7.7	9.4	13.9	4.1	7.8	6.4	262
Others	2.5	0.5	2	0.9	3.6	2.1	1.5	1.8	72
No response	0.1		2		0.6	0.2	0.2	0.2	9

Annex Table - 3.64
Purpose of Internet use by Sex, Pakistan, 2008

(Percent)

Purpose	Males	Females	Total	
			Percent	Number
E-mail	27.7	33.2	28.5	1174
Voice communication	6.6	5.3	6.4	263
News / Sports/ Entertainment	16.6	17	16.6	684
Employment help	12.3	12.6	12.4	508

Office work	11.1	8.4	10.6	438
Business / trade	6.6	4.6	6.3	258
Travel booking	3.5	4.3	3.6	150
Studies / Education	20.7	28.8	22	906
Watching movies	6	7.6	6.2	257
Chatting	11	8.8	10.6	438
Banking	2.5	3	2.6	108
Health / Medical	3.4	4.1	3.5	145
Online shopping	2.3	1.5	2.2	91
Games	6.2	7.5	6.4	262
Others	1.6	2.4	1.8	72
No response	0.3		0.2	9

Annex Table - 3.65
Females and Children using Internet by Residence and Region, Pakistan, 2008

(Percent)

Use of Internet		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Females use Internet									
No		79.4	86.1	90.7	84.4	75.2	90.9	77.3	82.5
Yes		20.6	13.9	9.3	15.6	24.8	9.1	22.7	17.5
Children use Internet									
No		80.1	85.7	86.2	79.2	73.3	87.8	78	81.8
Yes		19.9	14.3	13.8	20.8	26.7	12.2	22	18.2
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113

Annex Table - 3.66
Females and Children using Internet by Sex, Pakistan, 2008

(Percent)

Use of Internet		Males	Females	Total
Females use Internet				
No		85.7	65.6	82.5
Yes		14.3	34.4	17.5
Children use Internet				
No		82.7	76.9	81.8
Yes		17.3	23.1	18.2
Total	Percent	100	100	100
	Number	3456	657	4113

Annex Table - 3.67
Impact of FLL / WLL by Residence and Region, Pakistan, 2008

(Percent)

Extent of Impact	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Broadening of social circle								
No	16.3	4	4.5	6.4	6.7	8.6	11.6	10.5
Somewhat	34.7	34.3	32.4	34.6	41.2	32.5	36.1	34.7
Very much	13.5	11.1	12.6	34.9	25.5	13.8	16.7	15.6
No response	35.5	50.6	50.6	24.1	26.7	45	35.6	39.2
Better family cohesion								
No	10.2	3.5	2.8	2.2	6.7	7.2	6.5	6.7
Somewhat	31.6	33.7	31.6	28.1	35.8	28.5	34.2	32
Very much	22.2	13.7	17.4	47.6	30.3	18.4	25.1	22.5
No response	36.1	49	48.2	22.1	27.3	45.9	34.3	38.7
Improved access o health / medical facility								
No	20	7.2	2.8	5.5	16.4	12.6	13.9	13.4
Somewhat	27.8	30.6	21.9	27.6	23.6	25.3	29.8	28.1
Very much	14.1	7.1	14.2	41.4	27.3	13.3	17	15.6
No response	38.1	55	61.1	25.4	32.7	48.7	39.3	42.9
Helpful in education								
No	22.9	11.6	7.3	14.7	26.1	16.9	18.4	17.8
Somewhat	24.7	25.4	13.4	29.8	26.1	22.7	26.1	24.8
Very much	14.1	6.3	3.2	28.7	20	10	14.8	13
No response	38.3	56.7	76.1	26.8	27.9	50.3	40.6	44.3

Helpful in solving day to day problems									
No		15.5	7.1	6.5	6.1	14.5	9.9	12.3	11.4
Somewhat		29.7	25.5	19	33.6	27.9	25.5	29.8	28.2
Very much		17.1	14	9.7	33.8	26.1	14.7	20	18
No response		37.6	53.4	64.8	26.5	31.5	49.8	37.9	42.5
Improved interactions with civic authorities									
No		22.6	14.9	4.5	13.8	13.3	16.5	18.8	17.9
Somewhat		26.4	23.4	23.1	30.3	27.3	24.7	26.5	25.8
Very much		13.4	3.9	10.9	23.7	23.6	8.9	13.9	12
No response		37.5	57.7	61.5	32.2	35.8	49.9	40.8	44.3
Quick help in emergencies									
No		15.3	7.4	2.4	7.7	13.9	11.2	11.4	11.3
Somewhat		25.5	23.6	20.2	25.7	18.2	23	25.2	24.3
Very much		21.1	14.7	18.2	37.1	32.7	17	23.9	21.3
No response		38.1	54.3	59.1	29.6	35.2	48.9	39.5	43.1
Increased awareness of employment / work *									
No		23.8	7	4.5	11.8	23.6	15.9	16.6	16.3
Somewhat		25	25.5	18.2	25.9	26.1	21.2	27.2	24.9
Very much		12.4	11.9	6.9	32.7	14.5	11.8	15.8	14.2
No response		38.8	55.6	70.4	29.6	35.8	51.1	40.4	44.5
Reduced need for travel									
No		16.4	4.2	4	16.4	27.9	11.3	13.3	12.5
Somewhat		28.8	27.3	25.5	23.9	15.8	24.9	28.4	27.1
Very much		16.9	13.8	6.1	26.8	21.2	14.6	17.8	16.6
No response		37.9	54.7	64.4	32.9	35.2	49.2	40.4	43.8
Increased savings									
No		36.2	25	29.1	47.8	46.1	32.7	35.1	34.1
Somewhat		21.6	24.6	21.5	27.6	24.2	19.9	25.3	23.3
Very much		6.4	4.5	2	4.8	2.4	4.6	5.7	5.3
No response		35.8	45.8	47.4	19.7	27.3	42.8	34	37.3
Increased income									
No		41	23.3	32.4	43.9	52.7	32.7	38.1	36.1
Somewhat		16.5	21.1	14.6	26.1	14.5	16.7	20	18.7
Very much		6.4	4.5	3.6	9.6	4.8	5	6.5	6
No response		36.1	51.1	49.4	20.4	27.9	45.6	35.4	39.3
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113

* Refer at Serial Nos. in Table Nos. 5.64 to 5.69

Annex Table - 3.68
Impact of Mobile Phone by Residence and Region, Pakistan, 2008

(Percent)

Extent of various Impacts	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Broadening of social circle								
No	11.8	3.5	5.3	5.9	14.5	7.2	9.1	8.4
Somewhat	49.8	62	68.4	34	34.5	54.4	50.8	52.2
Very much	31.5	21.7	17.4	48.2	37.6	28	31	29.8
No response	7	12.8	8.9	11.8	13.3	10.4	9.1	9.6
Better family cohesion								
No	7.6	3.1	3.2	2.4	16.4	4.6	6.5	5.8
Somewhat	48.7	60.9	64.4	34.2	36.4	52.5	50.3	51.2
Very much	35.6	29.8	25.1	56.1	33.9	33.4	36.7	35.5
No response	8	6.2	7.3	7.2	13.3	9.4	6.4	7.5
Improved access o health/medical facility								
No	22.1	11.7	6.1	9.2	15.8	15.3	17	16.4
Somewhat	43.9	53	47.8	30.5	27.3	44.7	44.7	44.7
Very much	23.6	11.9	15	48.2	43.6	21.8	24	23.1
No response	10.5	23.4	31.2	12.1	13.3	18.2	14.3	15.8
Helpful in education								
No	26.2	15.8	8.9	17.3	21.2	21.2	20.7	20.9
Somewhat	38.7	45.6	36	30	26.7	38.1	39.8	39.1
Very much	21.5	9.9	6.1	37.9	40	17.5	21.1	19.7
No response	13.7	28.7	49	14.7	12.1	23.3	18.4	20.3
Helpful in solving day to day problems								
No	12.4	8.6	7.3	6.4	17	9.3	11.2	10.5
Somewhat	41.5	46.1	49	32	26.7	41.9	41.6	41.7
Very much	34.7	29.2	17	48.2	43	32	35.1	33.9
No response	11.3	16	26.7	13.4	13.3	16.8	12.2	14
Improved interactions with civic authorities								
No	39.9	29.1	13.4	25.9	26.7	31.1	34.3	33
Somewhat	30.1	33.2	21.1	32.5	32.1	30.6	31	30.8
Very much	14.7	7.8	9.3	23	23	12.7	14.1	13.6
No response	15.3	29.9	56.3	18.6	18.2	25.7	20.6	22.6
Quick help in emergencies								
No	8.3	8	2.4	7.7	10.3	6.7	8.7	7.9

Somewhat		30.9	42.1	53.8	26.1	24.2	34.2	35.2	34.8
Very much		48.7	37.5	31.2	54.6	53.9	44.8	45.5	45.2
No response		12	12.3	12.6	11.6	11.5	14.4	10.6	12.1
Increased awareness of employment/ work									
No		17.8	11.2	6.9	8.1	11.5	13.2	14.3	13.9
Somewhat		40	42.5	45.3	28.3	29.1	38.3	39.9	39.3
Very much		30	27.5	19.4	43.9	41.8	28.6	31.9	30.7
No response		12.2	18.7	28.3	19.7	17.6	19.9	13.9	16.2
Reduced need for travel									
No		10.7	6.9	8.9	5.7	12.7	7.9	9.7	9
Somewhat		32	52.3	62.3	25.2	25.5	42.4	36.6	38.8
Very much		47.7	27	11.7	48	49.1	36.2	41.5	39.5
No response		9.6	13.8	17	21.1	12.7	13.5	12.2	12.7
Increased savings									
No		38.1	41.1	56.7	57	64.8	45.4	41.9	43.3
Somewhat		43.5	47.9	33.6	23.2	17.6	40	41.6	40.9
Very much		11.7	4.7	3.2	12.1	6.1	7.2	10	8.9
No response		6.7	6.3	6.5	7.7	11.5	7.4	6.5	6.9
Increased income									
No		42.9	43.3	53	45.4	58.8	44.9	44.3	44.5
Somewhat		35.6	40.2	32.4	26.3	19.4	34.1	35.7	35.1
Very much		12.7	3.8	7.3	18.9	8.5	9.2	10.9	10.3
No response		8.8	12.7	7.3	9.4	13.3	11.8	9.1	10.1
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113

Annex Table - 3.69
Impact of Internet Service by Residence and Region, Pakistan, 2008

(Percent)

Extent of Impact	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Broadening of social circle								
No	25.6	11	6.9	12.5	31.5	18.6	19.1	18.9
Somewhat	16.8	17.2	7.7	18.4	24.2	13.2	19.1	16.8
Very much	8	6.7	3.2	19.1	12.7	7.6	9.5	8.8
No response	49.6	65	82.2	50	31.5	60.5	52.3	55.5
Better family cohesion								
No	28.7	11.7	6.9	14.7	40	19.7	22.2	21.2
Somewhat	14.8	15	3.6	16.9	17.6	12.6	15.7	14.5

Very much	4	6.2	0.8	14	4.8	4.5	6.3	5.6
No response	52.6	67.1	88.7	54.4	37.6	63.2	55.8	58.6
Improved access to health / medical facility								
No	31	13.8	4	16.2	31.5	20.3	24.1	22.7
Somewhat	10.7	12.1	3.2	15.4	12.7	10.6	11.7	11.3
Very much	6	6.3	4	12.5	17.6	5.5	8.2	7.2
No response	52.3	67.8	88.7	55.9	38.2	63.5	56	58.9
Helpful in education								
No	13.9	9.9	2	3.5	16.4	10.1	11.5	11
Somewhat	11	12.2	9.7	11.8	10.3	11.5	11.2	11.3
Very much	24.6	11.7	11.3	37.1	43.6	18.4	24.5	22.1
No response	50.6	66.1	76.9	47.6	29.7	60	52.8	55.6
Helpful in solving day to day problems								
No	28.2	12.8	4	15.8	28.5	19.4	21.7	20.8
Somewhat	11.3	11.9	6.1	17.5	15.8	10.9	12.8	12
Very much	7.6	7	4.9	12.9	18.2	6.2	9.5	8.3
No response	52.9	68.3	85	53.7	37.6	63.5	56	58.9
Improved interactions with civic authorities								
No	36.9	18.5	8.1	33.3	36.4	26.2	31.2	29.3
Somewhat	8.2	9.4	0.4	7.9	13.3	9	7.8	8.3
Very much	1.9	3.4		3.1	10.3	1.7	3.3	2.7
No response	53	68.6	91.5	55.7	40	63	57.7	59.7
Quick help in emergencies								
No	36	16.5	6.5	23.2	42.4	25	28.7	27.3
Somewhat	7.9	9.7	3.2	12.9	10.3	7.5	9.6	8.8
Very much	3.5	3.9	0.4	8.1	8.5	3.4	4.6	4.2
No response	52.6	69.9	89.9	55.7	38.8	64.1	57	59.7
Increased awareness of employment / work								
No	26.1	10.7	3.2	5	19.4	16	18.5	17.6
Somewhat	10.6	11.5	6.9	11.6	11.5	10.8	10.8	10.8
Very much	10.8	11.7	7.3	32	30.9	11.4	15.6	14
No response	52.6	66.2	82.6	51.3	38.2	61.8	55.2	57.7
Reduced need for travel								
No	27.7	11.7	6.5	13.6	35.8	17.7	22.1	20.4
Somewhat	10.6	10.7	2.4	9.2	10.3	9	10.6	10
Very much	8.8	8	2.4	20.8	17	9	10.4	9.9
No response	52.9	69.6	88.7	56.4	37	64.3	56.9	59.7

Increased savings									
No		31.2	20.9	13	28.5	44.8	27.8	27	27.3
Somewhat		13.5	8.2	6.5	11.2	20	10.2	12.3	11.5
Very much		7.4	6.9	3.6	12.1	6.7	5.6	8.7	7.5
No response		48	64	76.9	48.2	28.5	56.4	52	53.7
Increased income									
No		37	19	15	26.1	52.1	27.4	31.3	29.8
Somewhat		9.8	7.5	4.9	12.9	12.1	8.4	9.7	9.2
Very much		4.2	5.3	0.8	10.3	7.3	4.3	5.6	5.1
No response		49	68.2	79.4	50.7	28.5	59.9	53.4	55.9
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113

Annex Table - 3.70
Household Monthly Family Income by Residence and Region, Pakistan, 2008

(Percent)

Family Income		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Upto Rs.5000		6.7	6.7	4.1	5.3	5.7	8.1	5.3	6.3
Rs.5001 – Rs.10000		32.4	26.7	40.4	35.1	13.3	36.8	26.9	30.8
Rs.10001 – Rs.20000		28.7	36.8	44.5	28.3	25.9	31.6	32.1	31.9
Rs.20001-Rs.50000		23.3	25.4	10.2	24.3	33.5	18.6	26.8	23.6
Rs.50001 – Rs.75000		2.8	1.9	0.4	0.9	5.1	0.6	3.4	2.3
Rs.75001 – Rs.100000		1.9	1.2		3.1	1.3	1	2.1	1.7
No response		4.1	1.4	0.4	3.1	15.2	3.3	3.5	3.4
Total	Percent	100	100	100	100	100	38.5	61.5	100
	Number	2003	1199	245	453	158	1564	2494	4058
Mean Income		19804.8	18840.8	14277.5	20226.2	25412.6	16265.7	21402.1	19417.2

Annex Table - 3.71
Household Monthly Family Income by Sex, Pakistan, 2008

(Percent)

Family Income		Males	Females	Total
Upto Rs.5000		6.3	6.7	6.3
Rs.5001 – Rs.10000		32.3	22.8	30.8
Rs.10001 – Rs.20000		32.7	27.4	31.9
Rs.20001-Rs.50000		21.9	32.6	23.6
Rs.50001 – Rs.75000		2.1	3.3	2.3
Rs.75001 – Rs.100000		1.7	1.7	1.7
No response		3	5.6	3.4
Total	Percent	100	100	100
	Number	3413	645	4058
Mean Income		18842.2	22534.3	19417.2

Annex Table – 3.72
Problems faced while using Telecom Services by Residence and Region, Pakistan, 2008

(Percent)

Problems	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total	
								Percent	Number
Slow Speed-internet	13.2	8.7	26.3	19.3	27.9	9.7	16.5	13.9	572
Frequent Disconnect-Internet	9.9	7.4	29.1	14.9	21.2	7.8	13.5	11.3	466
Congestion/ Line busy	15.3	30.3	50.2	23.5	29.1	20.8	24.9	23.3	959
Frequent Call Disconnection	17.5	20.4	65.2	28.1	15.8	20	23.7	22.3	918
Speech Not Clear	24.9	24.5	79.8	35.7	18.8	28.9	29.1	29	1193
Coverage problem (weal signals)	29.2	27.2	73.7	40.4	28.5	33.7	31.7	32.5	1335
Helpline / Directory Assistance Problem	10.1	9.4	44.5	23.7	7.9	13.9	13.1	13.4	551
Billing problem	7.3	7.1	13.8	24.6	11.5	8.7	10.3	9.7	399
Others	1	1.1	1.2	1.5	1.2	0.6	1.5	1.1	46
Faced any problem	53.3	49.8	96	67.5	65.5	53.2	59.2	56.9	2340
None	42	36.9	2.8	29.8	31.5	38.2	35.2	36.3	1495
No response	4.7	13.4	1.2	2.6	3	8.6	5.6	6.8	278

Annex Table - 3.73
Problems faced while using Telecom Services by Sex, Pakistan, 2008

(Percent)

Problems	Males	Females	Total	
			Percent	Number
Slow Speed – internet	13.6	15.4	13.9	572
Frequent Disconnect – Internet	10.5	15.7	11.3	466
Congestion / Line busy	23.6	21.8	23.3	959
Frequent Call Disconnection	22.9	19	22.3	918
Speech Not Clear	29.3	27.4	29	1193
Coverage problem (weal signals)	32.6	32	32.5	1335
Helpline / Directory Assistance Problem	14.4	8.2	13.4	551
Billing problem	9.5	10.5	9.7	399
Others	1.1	1.1	1.1	46
Faced any problem	56.3	60.1	56.9	2340
None	36.7	34.7	36.3	1495
No response	7.1	5.2	6.8	278

Annex Table - 3.74
Negative Impact of FLL/WLL by Residence and Region, Pakistan, 2008

(Percent)

Type of Negative Impact	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Creates tension								
No	91.9	93.8	96	84.2	83	93.7	90.1	91.5
Yes	8.1	6.2	4	15.8	17	6.3	9.9	8.5
Causes disturbance in work								
No	86.7	90.5	96.4	83.8	78.2	91.1	85.7	87.7
Yes	13.3	9.5	3.6	16.2	21.8	8.9	14.3	12.3
Wastes time								

No		87.9	83.3	94.7	81.8	73.9	89.2	83.5	85.7
Yes		12.1	16.7	5.3	18.2	26.1	10.8	16.5	14.3
Increase expenses									
No		65.8	64.2	77.3	51.5	53.9	69	60.9	64
Yes		34.2	35.8	22.7	48.5	46.1	31	39.1	36
Misused for antisocial activity									
No		81.3	72.9	83	62.7	78.8	77.2	76.5	76.8
Yes		18.7	27.1	17	37.3	21.2	22.8	23.5	23.2
Dangerous while driving									
No		82.2	72.1	87.4	59	77	80.1	74.7	76.8
Yes		17.8	27.9	12.6	41	23	19.9	25.3	23.2
Target for theft - robbery									
No		84.8	77.3	88.3	75.9	86.7	85	79.9	81.9
Yes		15.2	22.7	11.7	24.1	13.3	15	20.1	18.1
Others									
No		97.9	94.9	99.2	97.6	98.2	97.7	96.7	97.1
Yes		2.1	5.1	0.8	2.4	1.8	2.3	3.3	2.9
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113

Annex Table - 3.75
Negative Impact of FLL / WLL by Sex, Pakistan, 2008

(Percent)

Type of Negative Impact	Males	Females	Total
Creates tension			
No	92	88.7	91.5
Yes	8	11.3	8.5
Causes disturbance in work			
No	89.3	79.5	87.7
Yes	10.7	20.5	12.3
Wastes time			
No	87	78.8	85.7
Yes	13	21.2	14.3
Increase expenses			

No		65.7	54.6	64
Yes		34.3	45.4	36
Misused for antisocial activity				
No		77	75.6	76.8
Yes		23	24.4	23.2
Dangerous while driving				
No		77.2	74.3	76.8
Yes		22.8	25.7	23.2
Target for theft-robbery				
No		82.1	80.4	81.9
Yes		17.9	19.6	18.1
Others				
No		97.5	94.7	97.1
Yes		2.5	5.3	2.9
Total	Percent	100	100	100
	Number	3456	657	4113

Annex Table - 3.76
Negative Impact of Mobile Phone by Residence and Region, Pakistan, 2008

(Percent)

Type of Negative Impact	Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Creates tension								
No	74.7	80.6	71.3	74.3	49.1	78	73.5	75.2
Yes	25.3	19.4	28.7	25.7	50.9	22	26.5	24.8
Causes disturbance in work								
No	62.8	73.5	52.2	76.1	40	68.7	64.2	65.9
Yes	37.2	26.5	47.8	23.9	60	31.3	35.8	34.1
Wastes time								
No	66.7	66.8	42.1	65.8	28.5	67.3	61.3	63.6
Yes	33.3	33.2	57.9	34.2	71.5	32.7	38.7	36.4
Increase expenses								
No	33.9	24.2	18.6	31.8	23	29.2	29.6	29.5
Yes	66.1	75.8	81.4	68.2	77	70.8	70.4	70.5
Misused for antisocial activity								
No	42.8	37.1	55.9	43	40	42.8	41.2	41.8
Yes	57.2	62.9	44.1	57	60	57.2	58.8	58.2

Dangerous while driving									
No		21.1	19.5	30.8	36	20.6	25.2	21.3	22.8
Yes		78.9	80.5	69.2	64	79.4	74.8	78.7	77.2
Target for theft/robbery									
No		34.3	30.9	42.1	42.5	44.8	40.1	32	35.1
Yes		65.7	69.1	57.9	57.5	55.2	59.9	68	64.9
Others									
No		95.3	90	98	96.3	96.4	94.3	93.9	94
Yes		4.7	10	2	3.7	3.6	5.7	6.1	6
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113

Annex Table - 3.77
Negative Impact of Mobile Phone by Sex, Pakistan, 2008

(Percent)

Type of Negative Impact	Males	Females	Total
Creates tension			
No	76.3	69.4	75.2
Yes	23.7	30.6	24.8
Causes disturbance in work			
No	67.2	59.1	65.9
Yes	32.8	40.9	34.1
Wastes time			
No	64.8	57.2	63.6
Yes	35.2	42.8	36.4
Increase expenses			
No	28.5	34.6	29.5
Yes	71.5	65.4	70.5
Misused for antisocial activity			
No	41.2	44.9	41.8
Yes	58.8	55.1	58.2
Dangerous while driving			
No	21	32.4	22.8
Yes	79	67.6	77.2
Target for theft/robbery			
No	34.7	37.1	35.1
Yes	65.3	62.9	64.9

Others				
No		94.6	90.9	94
Yes		5.4	9.1	6
Total	Percent	100	100	100
	Number	3456	657	4113

Annex Table - 3.78
Negative Impact of Internet by Residence and Region, Pakistan, 2008

(Percent)

Type of Negative Impact		Punjab	Sindh	Balochistan	NWFP	AJK / FANA	Rural	Urban	Total
Creates tension									
No		93.6	94.1	96.8	87.7	83.6	94.5	91.9	92.9
Yes		6.4	5.9	3.2	12.3	16.4	5.5	8.1	7.1
Causes disturbance in work									
No		88.9	92.9	96	83.6	79.4	91.5	88.3	89.5
Yes		11.1	7.1	4	16.4	20.6	8.5	11.7	10.5
Wastes time									
No		76.3	86.1	89.1	77	59.4	81.6	78	79.4
Yes		23.7	13.9	10.9	23	40.6	18.4	22	20.6
Increase expenses									
No		76.9	80.6	92.7	75.9	60.6	80.6	76.6	78.2
Yes		23.1	19.4	7.3	24.1	39.4	19.4	23.4	21.8
Misused for antisocial activity									
No		82.6	86.9	90.7	75.2	65.5	85.1	81.4	82.8
Yes		17.4	13.1	9.3	24.8	34.5	14.9	18.6	17.2
Dangerous while driving									
No		85.3	86.6	95.5	72.6	77	86.7	83.3	84.6
Yes		14.7	13.4	4.5	27.4	23	13.3	16.7	15.4
Target for theft / robbery									
No		91.1	90.1	95.5	78.5	83	90.9	88.5	89.4
Yes		8.9	9.9	4.5	21.5	17	9.1	11.5	10.6
Others									
No		98.6	96.5	100	98.2	97	98.9	97.4	97.9
Yes		1.4	3.5		1.8	3	1.1	2.6	2.1
Total	Percent	100	100	100	100	100	38.3	61.7	100
	Number	2027	1218	247	456	165	1574	2539	4113

Annex Table - 3.79
Negative Impact of Internet by Sex, Pakistan, 2008

(Percent)

Type of Negative Impact		Males	Females	Total
Creates tension				
No		93	92.4	92.9
Yes		7	7.6	7.1
Causes disturbance in work				
No		90.4	84.9	89.5
Yes		9.6	15.1	10.5
Wastes time				
No		80.3	74.4	79.4
Yes		19.7	25.6	20.6
Increase expenses				
No		79.1	73.5	78.2
Yes		20.9	26.5	21.8
Misused for antisocial activity				
No		83.3	80.2	82.8
Yes		16.7	19.8	17.2
Dangerous while driving				
No		84.5	84.6	84.6
Yes		15.5	15.4	15.4
Target for theft/robbery				
No		89.5	88.9	89.4
Yes		10.5	11.1	10.6
Others				
No		98.3	95.9	97.9
Yes		1.7	4.1	2.1
Total	Percent	100	100	100
	Number	3456	657	4113

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