Pakistan Telecommunication Authority

Annual Report 2012

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PTA Vision

"Create a fair regulatory regime to promote investment, encourage competition, protect consumer interest and ensure high quality ICT services"

PTA

2012
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Pakistan Telecommunication Authority

PTA ANNUAL REPORT 2012

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Table of Contents

Figures

Tables

Abbreviations

A2P	Application-to-Person
AAR	Approved Accounting Rate
AJK	Azad Jammu and Kashmir
ALF	Annual License Fee
APC	Access Promotion Contribution
APNIC	Asia Pacific Network Information Centre
APT	Asia Pacific Telecommunity
ARPU	Average Revenue Per User
ASC	Auction Supervisory Committee
ASR	Approved Settlement Rate
BISP	Benazir Income Support Program
CGAP	Consultative Group to Assist the Poorest
CMOs	Cellular Mobile Operators
CNIC	Computrized National Identity Card
CoE	Centre of Excellence
CPI	Consumer Price Index
CSAF	Cellular Subscriber Agreement Form
CVAS	Class Value Added Services
CVCT	Cellular Village Connection Trial
DNSSEC	Domain Name Service Security Extensions
DSL	Digital Subscriber Line
FAB	Frequency Allocation Board
FAO	Food and Agriculture
FDI	Foreign Direct Investment
FED	Federal Excise Duty
FLL	Fixed Local Loop
FY	Fiscal Year
G2P	Government-to-Person
GB	Gilgit Bultistan
GDP	Gross Domestic Product
GST	General Sales Tax
GVA	Gross Value Added
HHI	Herfindhal-Hirschman index
ICH	International Clearing House
ICT	Information Communication Technology
IMEI	International Mobile Equipment Identity
IP	Internet Protocol
IPv6	Internet Protocol version 6
ITU	International Telecommunication Union
IVR	Interactive Voice Response
KPIs	Key Performance Indicators
KPK	Khyber Pakhtunkhawa

LDI	Long Distance International
LL	Local Loop
LUMS	Lahore University of Management and Sciences
M&RITT	Monitoring and Reconciliation of International Telephone Traffic
MNO	Mobile Network Operator
MNP	Mobile Number Portability
MoU	Memorandum of Understanding
MTR-I	Mobile Termination Rate – International
MVNO	Mobile Virtual Network Operator
NUST	National University of Science & Technology
OTC	Over-the-Counter
P2A	Person-to-Application
P2P	Person-to-Person
PIM	Pakistan Institute of Management
PTA	Pakistan Telecommunication Authority
PTCL	Pakistan Telecommunication Company Limited
QoS	Quality of Service
RFP	Request for Proposal
RIR	Regional Internet Registries
SAFIR	South Asian Foundation for Infrastructure Regulation
SAMENA	South Asia Middle East and North Africa
SBP	State Bank of Pakistan
SCO	Special Communications Organization
SIM	Subscriber Identity Module
SMS	Short Messaging Service
SoP	Standard of Procedure
STK	Sim Toolkit
TPSP	Third Party Service Provider
USF	Universal Service Fund
USSD	Unstructured Supplementary Service Data
USTTI	United States Telecommunications Training Institute
VAS	Value Addred Services
WAP	Wireless Application Protocol
WCDMA	Wideband Code Division Multiple Access
WLL	Wireless Local Loop

Syed Nasrulkarim A. Ghaznavi
Member (Finance)

Dr. Khawar Siddique
Member (Technical)

Message from the Authority

We are pleased to present the Annual Report of Pakistan Telecommunication Authority for the fiscal year 2011-12. The report provides a detailed review of the initiatives taken by the regulator during the year and the developments in the telecom sector of Pakistan. During the year, the Authority continued its endeavours to provide an enabling environment for progressive, competitive and modern telecom services in Pakistan. The Authority remained vigilant of the developments and regulatory challenges in the sector and proactively worked for the provision of conducive regulations, automation of telecom subscription, regulatory compliance, consumer protection and high quality of telecom services.

The telecom sector of Pakistan has proved to be a progressive and dynamic sector of Pakistan and achieved sustained growth in spite of the economic challenges faced by the overall economy. During the fiscal year 2011-12, the performance indicators of the sector have shown a positive growth. Total teledensity in the country has reached the mark of 72 percent and cellular subscribers were 120 million at the end of June 2012. Broadband subscribers have crossed the figure of 2 million and have shown an impressive average annual growth of 100 percent during the last five years. With a healthy growth in the sector, the telecom revenues have crossed Rs. 410 billion and also achieved financial stability in terms of ARPUs.

As per its mandate as envisaged in the Pakistan Telecommunication Act, 1996, the regulator remained vigilant and continued its efforts to meet the regulatory challenges of bringing in latest technology and modern services to the people of Pakistan. At this time, introduction of 3G services in the country is the top most priority of the Authority. We fully recognize the importance of 3G and beyond technologies in shaping the country's digital economy. We aim to expedite the process of spectrum auction for 3G services, which was delayed due to unavoidable circumstances. We are all set for the timely completion of 3G spectrum auction and transparent licensing of 3G services in the country. As a regulator, we want to assure you that the Authority would continue its endeavours to encourage healthy competition and availability of modern telecom technologies in our industry.

The report has been prepared by the Commercial Affairs Division with the support of all PTA Divisions and the industry. We would like to appreciate the efforts made by all divisions for preparing this report. Support of the industry is also acknowledged. We hope you will find this Report insightful in terms of regulatory and market updates about the telecom industry of Pakistan.

Dr. Khawar Siddique
Member (Technical)

Syed Nasrulkarim A. Ghaznavi
Member (Finance)

Pakistan Telecom Authority (PTA), since its establishment in 1996, kept a holistic approach for the development of telecom sector where consumer interest and business friendly environment remain the top priority on its agenda. The vision of the Authority to create an advanced, competitive, investor affable and consumer centric telecom environment in the country is the core of all regulatory activities of PTA. The development of Pakistan's telecom sector into a mature, competitive and progressive market has also brought new challenges to the front which are dealt with professional and reconciliatory approach by PTA. The Authority met with several challenges and issues during the reported year and defined its areas of action according to the arising situations. Working hand in hand with the telecom industry and under the patronage of Government of Pakistan (GoP), once again telecom sector of Pakistan performed well beyond expectations.

On the regulatory front, PTA kept a balanced regulatory approach towards the telecom market and performed its activities with professional élan. 3G will be the next big leap for Pakistan's telecom market and the Authority worked diligently to streamline the spectrum auction and ensure transparency in the whole process. For existing network efficiency and safety, PTA devised telecommunication and terminal equipment installer regulations, 2012 and also encouraged the operators to share their infrastructure for efficient utilization of network resources.

PTA always keeps national and public interests at the apex of its regulatory schema and the regulator's efforts to reorganize the SIM sale and subscriber verification procedures need no introduction. This year, PTA took the next step in this regard as automation of pre-sale documentation project rolled out in May 2012. For consumer health safety, PTA conducted BTS health hazard survey to ensure that mobile signals do not harm any individual in the nearby areas. Similarly, PTA took stern measures to restrict cross border interference and sale of Afghan SIMs in Pakistan territory. For consumer protection, PTA has already set up a dedicated department and revamped its complaint management system to ensure consumers reach the Authority conveniently. During the FY2012, PTA resolved 33,310 consumer complaints received against mobile operators, PTCL, LDIs, WLL, ISPs and MNP. In order to gauge consumer perception about telecom services, PTA launched consumer perception survey system and shared the results with general public. Besides approving consumer friendly package offers, PTA also prepared a comprehensive tariff awareness guide for consumers highlighting important aspects of tariffs and packages. For development of rural connectivity in far flung areas, PTA launched the cellular village

connection trial (CVCT) project in Neelum Valley, AJK. Recognizing the pivotal role of agriculture in country's economy, PTA organized a seminar on telecom's potential to assist and develop the agriculture sector of Pakistan.

To ensure regulatory compliance by the operators, PTA issued enforcement orders to the operators related to different matters. PTA took notice of increasing helpline assistance service charges by operators and refrained them from doing so. PTA also settled issues pertaining to broadband which were mostly related to PTCL's anti competitive practices. As part of its mandate and being a quality driven organization, PTA carried out a number of surveys related to broadband, helpline assistance, MNP and Internet bandwidth providers. The survey results were shared with the public for information and areas of improvement conveyed to the relevant operators. PTA also blocked websites and other internet links which are considered offensive and hateful towards the sentiments of the general public on regular basis.

All these regulatory efforts of PTA had a positive impact on the sector economy as telecom revenue also spiked to Rs. 411 billion showing a growth of 13% during FY2012. Telecom contribution to the national kitty was the highest ever this year i.e. Rs. 132.51 billion. Investment remained on the lower side this year; however, this would be a temporary phase as companies prepare for massive investment in the 3G arena soon. During FY2012, total telecom imports in the country increased by 24.5% to reach US$ 954 million mainly due to high imports of mobile handsets.

Teledensity is one of the foremost indicators of a country's telecom outlook. Total teledensity of the country reached at 71.7% showing growth of 5% in FY2012. Cellular mobile sector is the most important part of the telecom profile of Pakistan as it constitutes the major part of overall teledensity figure. The total mobile subscribers at the end of FY2012 stood at 120.1 million with growth rate of 10.3%, slightly better than that of previous year. Mobile penetration stands at 68.4% showing a growth of 5.8% over the last year. Cellular sector of Pakistan is a competitive market as confirmed by the Herfindhal-Hirschman Index (HHI) for the sector. As a result, companies kept on increasing their network coverage to gain the first entrant advantage as cell sites increased to 33,920 during FY 2012. In addition, PTA regularly explores new growth avenues for the cellular industry such as mobile financial services where PTA has collaborated with State Bank of Pakistan to use mobile platform to reach the 85% unbanked population of the country. The daunting task of formulating the Regulations

for Technical Implementation of Mobile Banking, 2012 while keeping all the stakeholders on board, has reached its final stage and it is expected that mobile banking services of all the banks/operators will soon be interconnected.

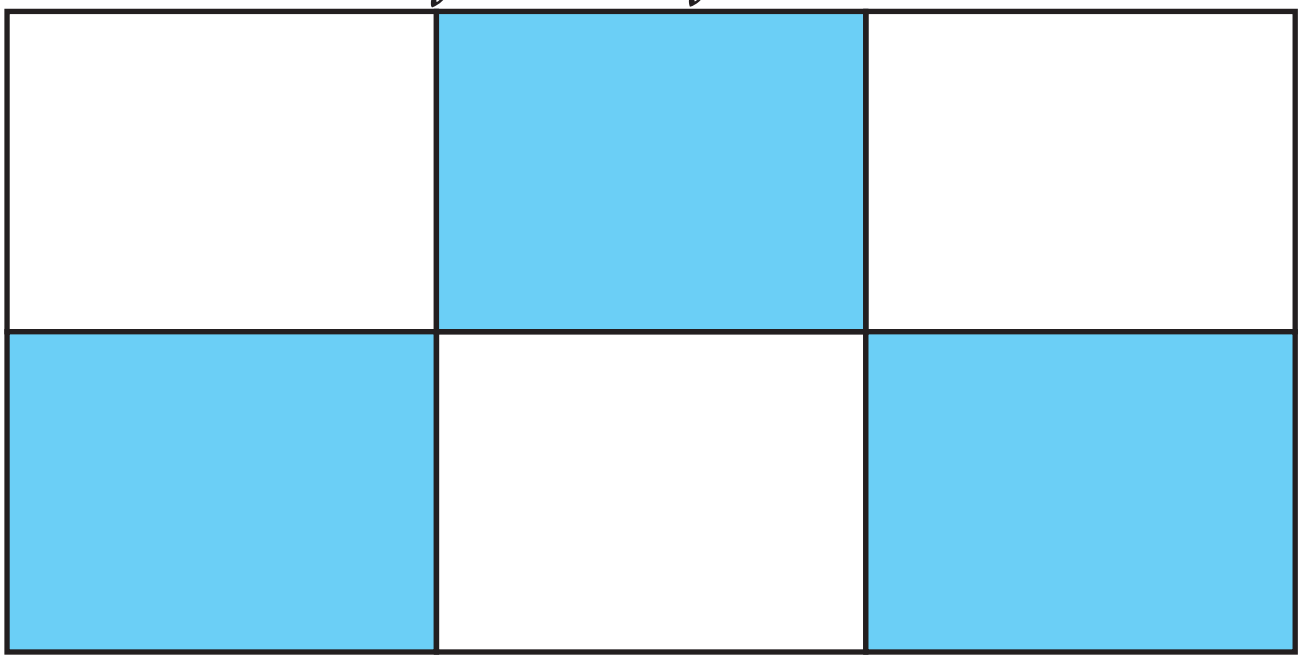
Broadband proliferation is another area of concentration for regulator which presented stellar growth during FY2012. Broadband subscribers in Pakistan crossed the two million mark to reach 2,101,315 showing 41% growth rate during FY2012. The challenge for PTA though is to elevate the broadband penetration which currently stands at 1.2%, up from 0.89% at the end of previous year. Wireless technologies like WiMAX and EvDO could be the game changer as these are already outperforming the primitive fixed broadband options. Similarly, local loop (LL) segment of the telecom industry is gradually progressing where customers are turning towards wireless solutions such as mobile cellular services. LL teledensity stands at 3.3% in Pakistan, which consists of 1.7% for FLL and 1.6% of WLL as of June, 2012. There are a total of 5.87 million local loop subscribers, 74% of which, belongs to the incumbent PTCL. The Long Distance and International (LDI) is another pillar of Pakistan telecom sector, responsible for carrying international traffic. The LDI networks recorded an all time high international traffic during the FY2012, i.e. 20.2 billion minutes as compared to 11.3 billion minutes in the previous year, showing 79% growth. One of the many challenges facing the Authority in the LDI sector is to curb the menace of illegal traffic and to recover its outstanding dues. In this regard, PTA notified the Policy Directive issued by MoIT regarding International Clearing House (ICH) exchange wherein Accounting Settlement Rates (ASR), LDI share and APC for USF have been revised.

PTA places special emphasis on research to transfer and implement new technologies as well as to find out ways of better management of the telecom sector. PTA is also widely regarded as one of the best examples of a sound regulatory regime; therefore, international and national organizations collaborate with PTA to conduct trainings, workshops, seminars and forums etc. In this regard, PTA joined hands with a number of local and international organizations such as ITU, LIRNEasia, CGAP, APNIC, Huawei, Ericsson etc to conduct seminars/workshops/ forums relevant to the emerging challenges of the telecom industry. Moreover, PTA officers regularly undertake research studies to stay one step ahead of the emerging technological and regulatory challenges. The studies relate to merger of LL & LDI license, inter-cellular network utilization for SMS traffic, regulatory reforms impact on economy, broadband penetration in Pakistan, QoS of international roaming, cyber filtering, LDI infrastructure and capabilities etc. PTA also takes care of its work force by organizing various local and foreign trainings and also sends its officers for representation at various international fora.

PTA, as caretaker of the telecommunication industry of Pakistan, believes in minimum regulatory intervention without compromising on quality of service (QoS), consumer protection, investor concerns and national interests. The Authority shall continue to govern the telecom sector with watchful eye and deal with emerging issues of the sector with professionalism and reconciliation with all stakeholders.

Chapter 1

Regulatory Environment



Regulatory environment is the foremost indicator of a country's overall strategy and vision about the developments in telecom sector. PTA as regulator of the telecom sector of Pakistan has strived hard to establish a competitive, fair, progressive, consumer oriented and business friendly regulatory environment in the country. Mainly focus of the Authority remained ensuring consumer protection, keeping the Quality of Service parameters in check, enabling ICT proliferation and devising sound regulatory framework for telecom services in the country. The activities of the Authority during the period under review have been detailed in the ensuing pages which were performed in line with the aforementioned objectives of PTA.

Road to 3G Services

(3rd Generation) mobile services have often been regarded as a landmark achievement of any country in terms of technological advancement and financial prosperity. Government of Pakistan considers telecom as one of the most important pillars of nation's economic well being and technological prowess. In addition to bringing inflows of foreign investment, the deployment of 3G services in Pakistan will ensue a new era of advanced mobile services such as MobileTV, video calling, high speed internet etc for the consumers. On the other hand, the cellular mobile industry will benefit from new revenue streams, advanced VAS provision, high demand of smart phones and improved mobile adoption rate. Thus, the Government of Pakistan approved the 3G/4G/LTE license spectrum auction in November 2011. The Auction will be carried out shortly.

WLL Spectrum Auction in 1.9 GHz and 3.5 GHz Frequency Band

With unprecedented growth of wireless broadband services and introduction of new players in the market, it became imperative for the Government of Pakistan to allocate more spectrum resources to the WLL operators. In this regard, PTA has been entrusted with the task of carrying out auction of the WLL spectrum as per guidelines provided in the Policy Directive, issued by Ministry of IT & Telecom. On the directions of the MoIT the auction of 1.9 and 3.5 GHz will be completed after the auction of 3G license/spectrum.

Regulatory Initiatives

PTA undertook various regulatory initiatives from time to time during FY2012 in order to fine tune the regulatory environment of the telecom sector of Pakistan. PTA reviews the market environment periodically and make necessary adjustments in the regulatory framework so as to keep up with the changing paradigms of the industry. In this regard, following regulatory initiatives were taken by the Authority during the year: -

Establishment of International Clearing House (ICH)

Government of Pakistan through Ministry of IT & Telecom issued a Policy Directive on August 13, 2012 to establish one gateway for international incoming traffic to Pakistan. The said Policy Directive also contained revised rates for ASR, APC and LDI share. Under the new set up, concept of Mobile Termination Rate-International (MTR-I) has been introduced by the Federal Government whereby mobile operators are also eligible to receive

certain portion of APC. PTA notified the revised rates as given in the Policy Directive, effective from 1st October 2012. In order to curb possibility of grey traffic, international traffic monitoring facility at ICH exchange will be regularly updated by ICH operator. In this regard, a new Fund will be created for up-gradation of monitoring equipment and promotion of local manufacturing in telecom sector.

The Lahore High Court has issued stay order in respect of ICH and PTA has issued necessary instructions to all the stake holders for strict compliance. However, during the period of first 25 days, the new arrangement fetched USD 62.89 million in the form of foreign exchange for Pakistan including USD 42.16 million accrued to LDI operators and USD 20.73 million to the national exchequer in terms of APC for USF.

Telecommunication and Terminal Equipment Installer Regulations, 2012

In a bid to ensure maximum coverage and increasing competition, the telecom operators installed widespread networks across Pakistan. PTA ensured that the equipment being installed by the telecom companies should be of international standard. Therefore, PTA devised the Telecommunication and Terminal Equipment Installer Regulations, 2012 which ensures that the telecom equipment at premises has been installed by a licensed telecom equipment installer who is required to register with PTA and meet international standards already defined in the license. Moreover, it also binds the premises owner to ensure that the equipment being installed at his/her place is certified by a licensed telecommunication and terminal equipment Installer. It is pertinent to mention here that quality telecom equipment and wiring enables the occupiers with uninterrupted access to multi-play telecom services or broadband using latest technologies. Therefore, all installations (both wired and wireless) have to be laid through a certified telecommunication and terminal equipment Installer.

Mobile Virtual Network Operation Regulations, 2012

A mobile virtual network operator (MVNO) is a license holder for providing cellular mobile services by entering into a commercial agreement with a Mobile Network Operator (MNO) and does not own the spectrum. The objective of these regulations is to establish a framework for mobile virtual network operators to provide mobile services under commercial agreements with mobile network operators.

The Regulations lay out the procedure for approval of commercial agreement and grant of license, criteria for eligibility of applicants for a MVNO Class License, fees, general conditions, commencement of operation terms, rights and obligations of MVNO, dispute resolution mechanism etc. The initial period of the license will be ten years, as per mutual agreement between the parties which will be further extendable for ten more years, subject to approval by the Authority.

Infrastructure Sharing

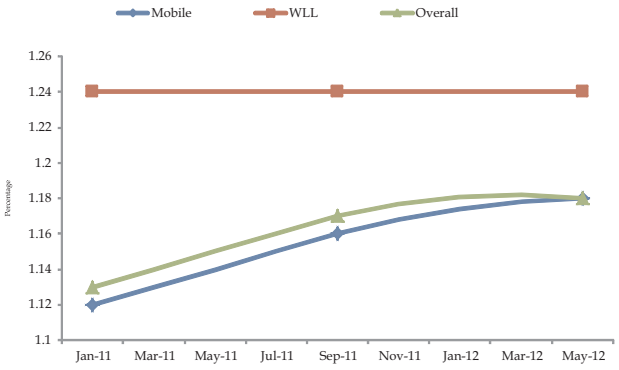
PTA encouraged the cellular mobile operators for infrastructure sharing so that network resources can be efficiently

utilized by the companies. Resultantly, all five cellular mobile operators, under the patronage of PTA, signed Memorandum of Understanding (MoU) to share cell sites and improve tenancy ratio. In this regard, an SOP was also issued by PTA to the operators outlining the required targets for each year i.e. Tenancy Ratio within next three years with yearly benchmarks of 1.1, 1.3 and finally 1.5.

Figure - 1 shows steady tenancy ratio growth over the past one and half year as CMOs have achieved required targeted tenancy ratio of 1.2 for the first year. However, the operators who failed to achieve the required tenancy ratio have been directed to improve their tenancy ratio in light of the SoP.

Figure - 1

Tenancy Ratio



Automation of Pre-Sale Documentation

PTA has been extending its best efforts to regularize SIM sale procedures in order to counter various consumer issues like misuse of CNIC copy and at the same time, address the concerns of law enforcement agencies. In this connection, a number of projects including "Subscriber Verification System 789" and "SIM Information System 667 and 668" have been launched by PTA in consultation with cellular mobile operators. These projects have not only helped to regularize 21 million mobile phone SIM connections but also facilitated to block 27.87 million irregular SIMs. The project for Automation of Pre-Sale Documentation is yet another step towards linking the SIM Pre-Sale process with the automated Post-Sale procedure.

As per the new procedure launched on 31st May 2012, it is required to present only original CNIC at any registered sale point to buy a new SIM along-with terms & conditions document in the SIM jacket. The sale personnel shall send the CNIC of the customer to a dedicated short code to authenticate sale. Hence only SIMs sold through registered sales channels would be activated after completing the requirements of the '789' helpline.

After commercial launch, the project underwent extensive monitoring through on-field surveys by PTA Zonal Office teams. In this connection, twelve surveys were conducted in order to ascertain adherence of PTA's SOPs by cellular mobile operators. Results of these surveys have been communicated to respective mobile companies for taking action against the violators. Moreover, 291 cases of illegal sale channels identified during the surveys have been sent to FIA/Police for initiating legal action against them.

The new system shall not only help to eliminate the misuse of CNIC's copy but also facilitate in keeping authentic record of SIMs sale thereby enabling track of sale channels in case of any misuse. Transition of existing Cellular Subscriber Agreement Form (CSAF) to e-CSAF will help to maintain an authentic subscribers' database.

Ensuring Quality of Service

Success of any telecom service requires telecom operators to maintain the standard of service, not only as a business obligation but as a license requirement as well. PTA's license terms and conditions lay out specific Quality of Service (QoS) standards to be met by the telecom service provider. In this regard, PTA regularly conducts QoS surveys throughout Pakistan so that operators are kept on their toes when it comes to providing high quality telecom services to the telecom consumers. Following is a brief overview of various surveys that were conducted by PTA during the FY2012: -

Mobile Operators Helpline Assistance Survey

In order to analyze the performance of Call Center/Helpline established by cellular companies for customers' assistance, a comprehensive survey of "Call Center/Helpline Assistance" was carried out across Pakistan during April-May 2012. The survey was carried out in Karachi, Lahore, Rawalpindi/Islamabad, Quetta, Peshawar and Muzaffarabad. During the survey, mobile operators' helplines (i.e. 3xx) were accessed and correctness of information provision, attitude of call center agents and agent access time was measured both in peak & off-peak timing. Besides live measurement, the old record of Assistance Response Time and Customer Complaint Response Time was also analyzed.

The live measurements and operator data revealed that access to helpline IVR system is established within few seconds; however, the long waiting time to access Call Center Operator/Agent is a major issue. Based on these results, mobile operators have been directed to improve their short comings/deficiencies.

BTS Health Hazard Survey

PTA devised "Protection from Health Related Effects of Radio based Antenna Regulations, 2008" in order to ensure the safety and health of the residents around the BTS areas. In this regard, PTA has been regularly conducting surveys across Pakistan and AJK&GB to check compliance of the Regulations by CMOs. Results of surveys conducted in 2009 and 2010 revealed that BTSs of all CMOs are transmitting power within the prescribed limits.

For the year 2012, survey was conducted from 12th March, 2012 to 16th April, 2012 covering cellular mobile and WLL operators in 12 cities of Pakistan. During the survey, a total of 501 BTSs (451 BTSs of CMOs and 50 BTSs of WLLs) were checked.

The survey results show that the transmitting power of BTSs of all CMOs and WLLs was within the prescribed limits. However, CMOs and WLLs were not complying with the parameters related to installation of towers for which strict warning to the concerned have been issued.

Broadband Quality of Service Survey

Broadband is one of the main focus areas of PTA and a platform for future technical and economic growth for Pakistan. To gauge the quality of broadband services, PTA carried out the second nationwide Broadband QoS Survey of all wireless and

wireline service providers throughout the country.

The survey was based on the QoS Key Performance Indicators (KPIs) devised in consultation with services providers. These are network availability, service availability, download and upload bandwidth speed, round-trip time, contention ratio and retain-ability etc. It is worthwhile to note that higher the value of download/upload speed, retainability and lower the round trip time, contention ratio, service quality is considered superior.

The QoS survey results of 1MBPS of operators in major cities are as under:-

Table - 1
Broadband Survey Results

City	Operator Name	QoS Parameters			
		Bandwidth (kbps)		Round-Trip Time (msec)	Retainability (Min)
		Download	Upload		
Islamabad	Link dot Net	882	199	44.5	60
	Micronet	796	211	12.67	60
	PTCL DSL	682	193	37.17	60
	Wateen Telecom	680	234	68.83	60
	Wi-Tribe	524	137	80.17	60
Lahore	Brain Net	859.31	384.24	92.83	60
	Link dot Net	752.63	228.61	194.17	60
	PTCL DSL	696.87	260.74	24.83	60
	PTCL EVDO (3.1 MB)	1060.45	425.53	63.5	60
	Wateen Telecom	911.35	208.95	79.5	60
	World Call DSL	618.65	448.01	18.33	60
	Nexlinx	743.45	182.93	45.5	60
	World Call USB	469.51	146.66	72	60
Karachi	World Call DSL	892	391	19	60
	World Call USB	575	376	86	60
	Mobilink Infinity	842	193	74	60
	Satcom	862	903	1	60
	Link dot Net	391	157	49	33
	PTCL DSL	507	198	56	60
	PTCL EVDO (3.1 MB)	1117	301	69	60
	Wateen Telecom	919	223	74	60
Peshawar	GoL Net	789.5	844.4	35.5	60
	Link dot Net	851	486.8	58.9	60
	PTCL DSL	671.21	440	26.1	60
	Wateen Telecom	461.02	250.83	65.35	60
Quetta	Link dot Net	863.33	227	47	60
	Wateen Telecom	790	259	61.5	60
	PTCL EVDO (3.1 MB)	414.5	159	147	60
	PTCL DSL	803	215	17	60

Telecom Events

Inauguration of Cellular Village Connection Trial (CVCT)

The Prime Minister of Pakistan, Raja Pervaiz Ashraf inaugurated the Cellular Village Connection Trial (CVCT) project at Athmuqam, Neelum Valley AJK on 18th July, 2012. President and Prime Minister of AJK, Federal Minister for information and Federal Minister for AJK&GB were also present at the occasion.

The Prime Minister was briefed about the efforts made for the development of telecommunication facilities at AJK in general and Neelum Valley in particular. It was noted that after introduction of competition in 2006 by PTA, new operators started their service and all segments of the sector witnessed rapid growth. Today, almost 82% of the area in AJK & GB comprising 270 cities/towns and villages are covered with telecom services. Similarly, to provide telecom services for the people of Neelum Valley, PTA initiated Cellular Village Connection Trial (CVCT) project at Athmuqam. The equipment was provided to SCO by Huawei through efforts of PTA. SCO successfully launched the project which is not only providing cellular services to the people but also catering for the needs of the defense organizations.

At the occasion, the Prime Minister stressed upon the need of telecommunication services for socio-economic development of the area. He appreciated the efforts made by PTA and SCO and ensured provision of necessary funds in order to expand telecommunication services to other parts of Neelum Valley.

Secretary General ITU visits PTA

The International Telecommunication Union (ITU) is the specialized agency of the United Nations which coordinates the shared global use of the radio spectrum, promotes international cooperation in assigning satellite orbits, works to improve telecommunication infrastructure in the developing world and establishes worldwide standards.[1] PTA has always been an active member of ITU and served as Centre of Excellence for Asia-Pacific. Honouring this amiable association, Dr. Hamadoun I. Toure, Secretary General ITU paid a special visit to PTA Headquarters while on official visit to Pakistan. The reception was attended by CEOs of telecom operators, Members of the Authority and senior PTA officials.

[1] Http://en.wikipedia.org/wiki/International_Telecommunication_Union

The Secretary General ITU was apprised about the achievements of Pakistan in telecom sector particularly cellular mobile segment. The market potential of Pakistan for wireless technologies particularly broadband services and PTA's future plans were also presented to the Honourable guest. Dr. Toure thanked PTA for arranging reception in his honour and appreciated the tremendous telecom growth of Pakistan. He commended the role of PTA in creating sound regulatory regime in Pakistan by protecting consumers' as well as investors' interest and providing level playing field. Later, Dr. Toure planted a tree in the premises of PTA Headquarters.

Launch of Local Search Engine and other ICT Applications on National Rabta Portal (www.pakistan.pk)

Pakistan Telecommunication Authority launched "National Rabta Portal" in December, 2010 to provide a single source facilitation web portal where information and content is made accessible to the general public via www.pakistan.pk. Building on the success of the earlier initiative, PTA launched a local search engine "Raftaar Pakistan" on 6th January, 2012 which will fetch the relevant information from websites registered under .pk ccTLD. It is the first of its kind online search platform offering filtered and Pakistan-based content.

In addition, PTA also launched Urdu version for National Rabta Information Portal on 1st February, 2012 to provide online information to those internet users who are generally less-educated in web-surfing or less-familiar with English language. Now anyone can access the online available information regarding government, industry, tourism, health, media and telecommunication through a simple click.

Consumer Protection Initiatives

Launch of Consumer Perception Survey System (8899)

PTA keeps consumer perception at the forefront when devising regulatory strategies and taking important industry measures. Therefore, in order to gauge consumer perception about their experience with concerned cellular mobile operator, PTA launched "SMS based consumer perception survey system

(8899)" in November, 2011. The quality of service of each mobile operator was asked from mobile phone users through SMS, with marks ranging from 1 (lowest) to 10 (highest) in terms of satisfaction of their service experience. According to the survey results, 30% of the Mobilink's respondents voted its service as excellent, while 29% of Warid's sample users marked the service as excellent. Telenor's service was viewed as excellent by 22.5% of its respondents whereas 20% of CMPak respondents experienced excellent services by the company. However, only 16% of Ufone's respondents termed the service as excellent.

Tariff Awareness Guide for Consumers

Telecom sector of Pakistan is highly competitive and companies introduce new tariff plans, packages and consumer incentives frequently. Therefore, it becomes cumbersome as well as confusing for the consumers to keep up with these changes. Keeping in view the right of information of the consumers, PTA prepared "Tariff Awareness Guide" for the facilitation of telecom consumers. The guide provides customers with necessary guidelines about telecom operator's obligations with regards to tariff packages and also educates the reader about choice of tariff package and ways of complaint lodging and tracking. The guide is available at PTA website for the information of telecom consumers.

Telenor Package Change

Telenor converted all existing customers on Talk Shawk 30-second package to 1-minute pulse (the new Talk Shawk Economy package) without providing an option to the customers on the matter. This act of Telenor violated Telecom Consumer Protection (Amendment) Regulations 2009. Therefore, Telenor was directed to change the nature of Talk Shawk Economy package from "opt-out" to "opt-in". Telenor complied by allowing the customers to revert back to their previous package without charging them "Package Conversion Fee" for at least one month.

PTCL Tariff Change Approvals

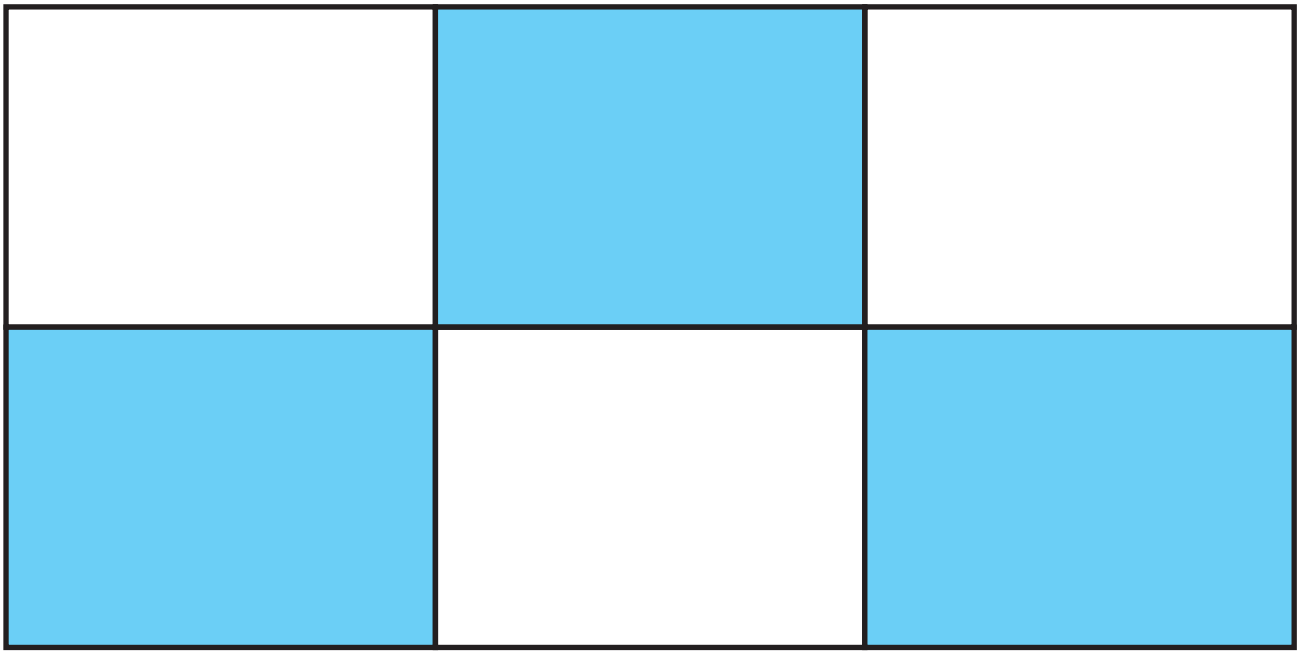
PTCL, being the SMP of local loop sector, submitted change in its tariff packages to the Authority for approval. In this regard, following proposals of PTCL were approved by the Authority: -

- Decrease in fixed to mobile call rates
- Revision of Vfone prepaid packages
- PTCL's proposal for New Budget Package

The Authority analyses the tariff packages submitted by PTCL and decides on the feasibility of proposals keeping in view the impact on market behaviour, consumer interest and competition in the industry. Decreasing the charges of fixed to mobile call from existing Rs. 2.5/minute to Rs. 1.25/minute, revisions in Vfone Unlimited and Family line rent and call rates and launch of a new budget package were approved considering competitive consumer friendly resulting into potentially positive impact for both the industry and the consumers.

Chapter 2

Telecom Sector Review



Telecom Economy

The economy of Pakistan showed modest recovery during FY2012 and performed better than last year. The GDP growth has been estimated 3.7 percent during FY2012 compared to 3.0 percent previous year. Growth in FY2012 was primarily driven by consumption expenditure whereas investment in the country remained low at 12.5 percent of GDP. In order to achieve sustainable growth in the medium term, it is important to revive investment. Persistent inflation in the double digit for the last five years is due to continued fiscal borrowings; in FY2012 fiscal borrowings from the scheduled banks increased by 50 percent, resulting in crowding out of lending to private sector. The services sector of the economy showed a growth of 4.0 percent during FY2012 compared to 4.5 percent a year earlier. The growth in manufacturing has been estimated at 3.6, which is higher than last year's 3.1 percent. Agriculture sector also performed better with a growth of 3.1 percent as compared to 2.4 percent growth in FY2011.[2]

Inflows of foreign remittances have reached US$ 13 billion during FY2012, showing a healthy growth of 16 percent from previous year. Significant inflow of remittances also contributed in keeping the current account deficit to US$ 4.5 billion despite large trade deficit. The imports in the country during FY2012 increased to US$ 40 billion due to heavy imports of petroleum and fertilizer whereas exports remained US$ 24.7 billion during the year. For fiscal consolidation, government continued its efforts to increase the tax base and simplification of tax structure in the country. Resultantly, Federal Board of Revenue collected Rs. 1608 billion during July-May 2012. In order to revive the growth momentum and investment in the economy, comprehensive and credible reforms are required primarily in the energy and fiscal sectors.

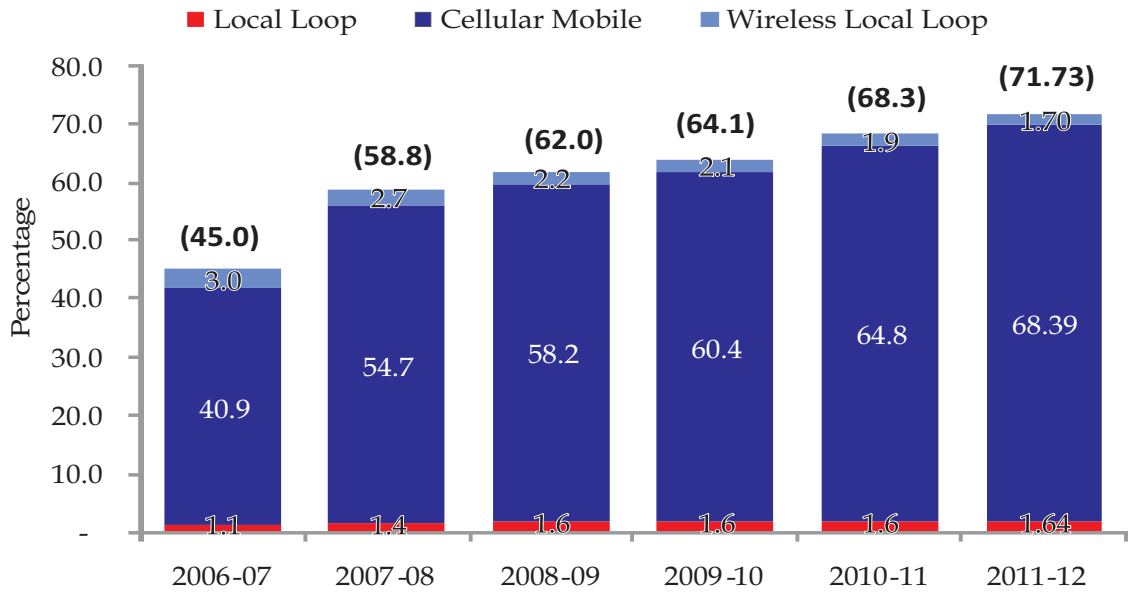
Despite challenging economic environment in the country, the telecom sector of Pakistan performed relatively better and most telecom indicators showed positive growth. Total teledensity crossed 71.7 percent at the end of June 2012, telecom revenues reached Rs. 411 billion showing a growth of 11 percent over FY2011, broadband subscribers crossed the mark of 2.1 million and cellular subscribers reached 120 million at the end of FY2012. Nevertheless, investment remained low in the sector and only US$ 240 million were invested during the year compared to US$ 493 million in FY2011 as basic telecom infrastructure in the country has been laid down by the telecom operators.

Teledensity

At the end of FY2012, total teledensity in the country increased to 71.7 percent, showing a growth of 5 percent over the previous year. Telecom operators achieved this growth despite continued slow economic growth in the country. Cellular mobile, being the most vibrant segment of the telecom sector of Pakistan, contributed solely towards this increase in total teledensity as the local loop teledensity is continuously declining over the last few years. Wireless Local Loop (WLL) teledensity has shown a small increase during FY2012 and is currently

[2]Information in this section is based on 'Pakistan Economic Survey 2011-12, Finance Division, Islamabad' and 'Monetary Policy statement, August 2012, State Bank of Pakistan'.

Figure - 2
Teledensity



1.64%, however, could not compensate for the decline in Fixed Local Loop (FLL) teledensity. Resultantly, at the end of FY2012 LL teledensity is 3.34% compared to 3.5% in the previous year.

Telecom Revenues

Annual revenues of the telecom sector have reached Rs. 411.4 billion during FY2012, registering a growth of 12 percent over the last year. This is a significant increase in revenues compared to a slow revenue growth in the last two years where total telecom revenue growth remained in single digit i.e. 5.4 percent in FY2011 and 3.1 percent in FY2010. This year's healthy revenue growth has been due to the efforts of the telecom operators to improve their financial health through new value added services, subscribers' addition and expansion in internet and data services. In order to increase revenue and promote their brand names, cellular mobile operators are also offering various packages through premium rate SMS services.

Figure - 3
Telecom Revenues

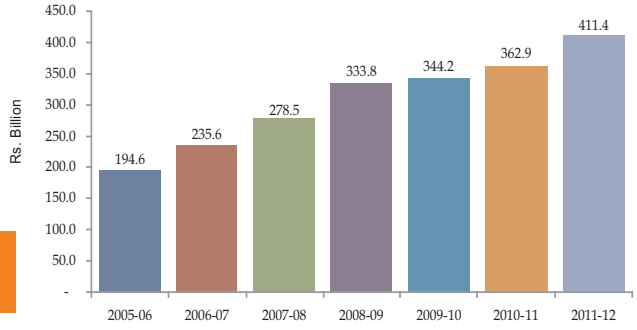
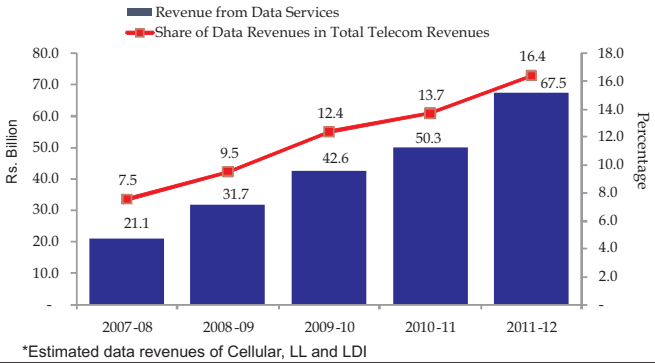


Figure - 4
Data Revenues of Telecom Sector *

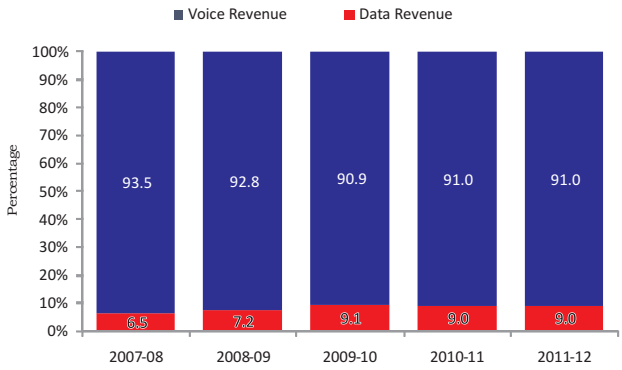


*Estimated data revenues of Cellular, LL and LDI

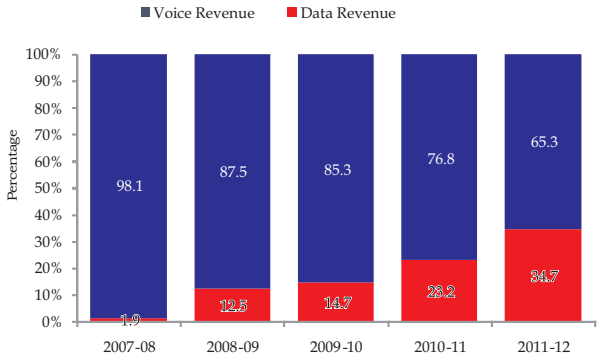
Telecom operators have different streams of revenue generation, which can be broadly categorized into voice, data and other services. Voice services have the major share (84%) in the total telecom revenues in the country and total voice revenue was Rs. 343.9 billion during FY2012. With the increasing use of data services including broadband, dial-up internet, SMS and MMS, the revenue of the companies from data services have increased over time and reached Rs. 67.5 billion in FY2012. The share of data revenue in total telecom revenue has also increased from 7.5 percent in FY2008 to 16.4 percent in FY2012. Broadband subscribers in the country have crossed the 2 million mark. Majority of these services are provided through LL and WLL companies in particular PTCL, therefore, data revenues of LL, WLL, CVAS and LDI companies have shown a significant growth and have reached Rs. 40.7 billion during FY2012, showing 52 percent growth over the last year. On the other hand, data revenues of cellular mobile sector showed a relatively slow year on year growth of 14 percent reaching Rs. 26.8 billion in FY2012. A significant feature of local loop segment is that share of data revenue in its total revenue has reached 35 percent in FY2012, which was just 2 percent in FY2008. Comparatively, cellular sector's data revenues are only 9 percent of the total revenues of the cellular sector, and there has been no change in this share during the last three years. Data revenues of cellular companies are also expected to increase significantly with the launch of 3G services.

Figure - 5
Data and Voice Revenues Shares (%)

Cellular Operators



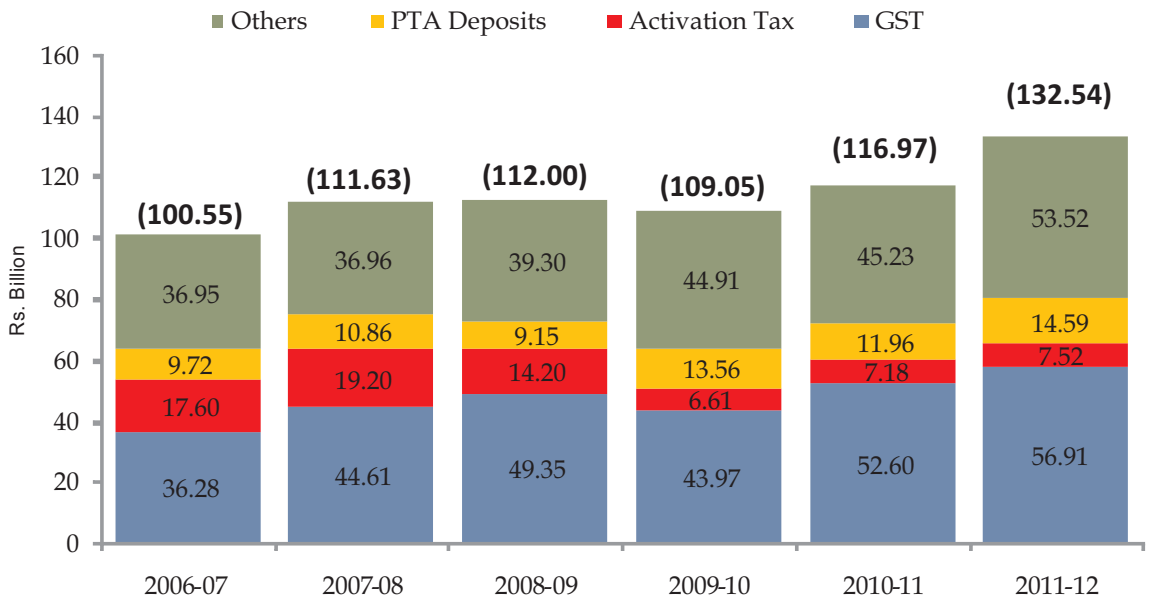
Local Loop Operators



Telecom Contribution to National Exchequer

Telecom sector has been contributing significantly to the national exchequer in terms of taxes, regulatory fee, activation tax and other charges. During FY2012, the sector has contributed a record Rs. 132.5 billion compared to Rs. 117 billion last year. Major share of this growth has been through Federal Excise Duty (FED) and other taxes. Telecom sector has been overburdened with heavy taxes and telecom companies are contributing almost 30 percent of their revenues under FED and withholding tax. General Sales Tax (GST) on telecom services is deducted under FED @19.5% whereas normally prevailing GST rate on services in the economy is 16%. Rationalization of telecom taxes can positively contribute to the telecom sector growth and telecom sector contribution in the economy.

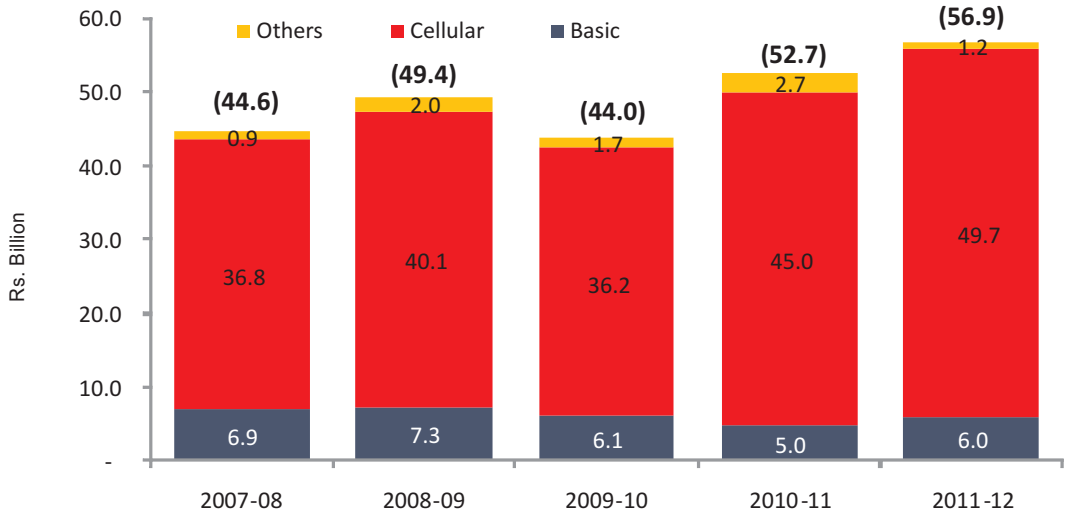
Figure - 6
Telecom Contribution to Exchequer



Source: Federal **Board of Revenue and Pakistan Telecommunication Authority.**
Note: PTA's contributions comprise of all its receipts including Initial and Annual License Fee, Annual Spectrum Administrative Fee, USF and R&D Fund Contributions, Numbering Charges, License Application Fee, etc.
Others include custom duties, WH Tax and other taxes.

Telecom is the largest contributor in GST collection from services in the country. GST/FED collected from telecom was Rs. 56.9 billion in FY2012 compared to Rs. 52.7 in the previous year, showing a growth of 8 percent. The growth in the GST/CED collection has slowed down during FY2012 as collections from cellular and other sectors showed a lower growth than previous year. Revenue collected through cellular mobile sector amounts to Rs. 49.7 billion during FY2012 compared to Rs. 45 billion in FY2011, showing a growth of 10.5 percent, which is lower than 24.2 percent growth a year earlier.

Figure - 7
GST/FED Collected



Source: Federal **Board of Revenue**

Telecom Investment

Telecom sector of Pakistan has attracted substantial investment after the deregulation. During the last seven years, more than US$ 12 billion has been invested in the telecom infrastructure and new technologies. Currently, over 90 percent of our population has access to telecom services, which has been possible due to expansion of telecom infrastructure all over the country by telecom operators. As operators have established their basic infrastructure, investments are required for necessary expansion, system maintenance and upgrades, and new technology adoption. Therefore, telecom investment, which was to the tune of US$ 4 billion in FY2007, has now reduced to US$ 240 million during FY2012.

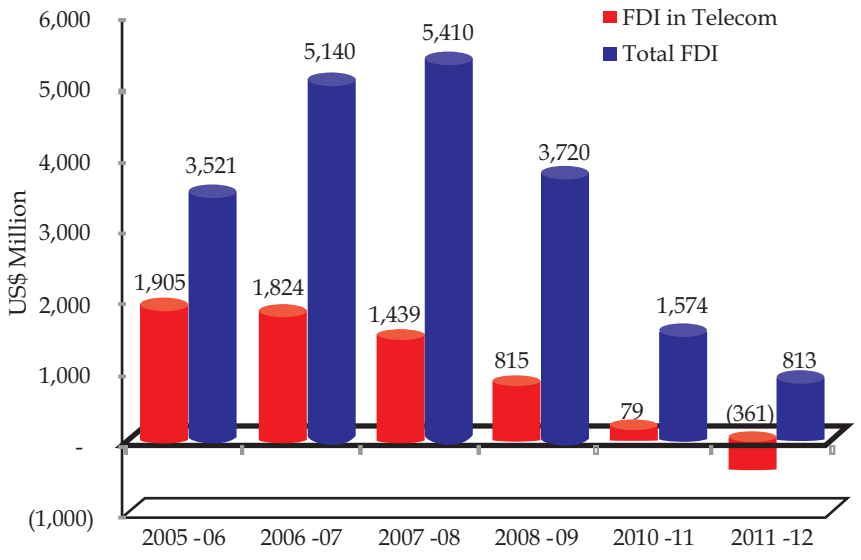
Foreign Direct Investment (FDI) in telecom has also shown similar pattern as overall investment in the sector. During FY2006 to FY2010, telecom sector attracted over US$ 6 billion FDI in the country, which was almost 30 percent of the total FDI in the country. During the last two years, overall FDI in the country has reduced significantly. According to State Bank of Pakistan, total FDI in Pakistan was US$ 813 million during FY2012, whereas net inflows of FDI in telecom remained negative during the year on account of capital outflow by some companies. Overall slow economic growth has also contributed in the low investment in telecom. With the expected launch of 3G/4G services in the country during 2013, it is expected that the cellular mobile sector will attract significant investment in the next two years.

Table - 2
Telecom Investment

US$ (Million)

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Cellular	2,584.5	2,337.7	1,229.75	908.8	358.6	211.8
LDI	602.8	403.9	276.75	183.1	108.7	16.2
LL	40.6	342.1	57.37	22.5	18.2	5.0
WLL	747.0	52.8	82.11	23.0	7.6	7.3
Total	**3,974.8**	**3,136.4**	**1,645.98**	**1,137.51**	**493.25**	**240.3**

Figure - 8
Foreign Direct Investment

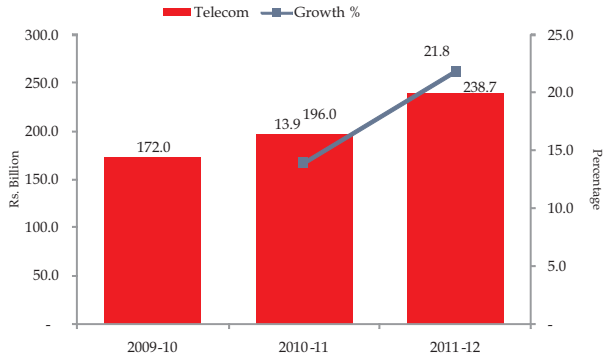


Source: State Bank of Pakistan

Gross Value Added

Gross value added (GVA) of telecom sector is a measure of the value of services produced in the sector and is calculated by Federal Bureau of Statistics on annual basis as part of the exercise to compile the national accounts and Gross Domestic Product (GDP) estimates. GVA (at Factor Cost) of each sector in the economy when combined together and adjusted for taxes and subsidies on the production, provides GDP in the country. During the FY2012, telecom sector of Pakistan registered a GVA of Rs. 238.7 billion, showing a growth of 22 percent from previous year. Based on this GVA, telecom sector has 1.23% share in the GDP and 2.3% share in the total GVA of services sector in Pakistan for FY2012.

Figure - 9
Gross Value Added (Current Factor Cost) in Telecommunication Sector



Source: Federal Bureau of Statistics

Telecom Imports

During FY2012, total telecom imports in the country reached US$ 954 million, showing a sharp rise of 24.5 percent over the previous year. This increase in total telecom imports is due to a sharp rise in the imports of cellular mobile handsets in the country, which have reached US$ 465.3 million in FY2012 compared to 218 million in FY2011, registering a growth of 113 percent. This fresh rise in the import of cell phones is due to an increasing demand for less costly Chinese mobile handsets while cellular subscribers have reached 120 million and an increasing demand for expensive smart phones in the country. This import demand is at the back of attractive mobile internet packages and upcoming 3G services. A huge import bill of almost half a billion dollar for cell phones is not desirable under current economic situation when country's trade deficit has reached US$ 15.4 billion and country is facing a current account deficit of US$ 4.5 billion. PTA is encouraging existing and new companies to initiate telecom manufacturing in the country. Government of Pakistan and PTA are willing to provide all possible cooperation to facilitate the process. To begin with, assembly lines can be established for selected telecom equipments with the help of our close trading partners.

Table - 3
Telecom Imports

US$ (Million)

	2007-08	2008-09	2009-10	2010-11	2011-12
Cellular Mobile Sets with Battery	445.9	129.7	169.23	218.2	465.3
Other Telecom Apparatus	885.1	570.4	556.45	548.1	488.7
Total Telecom Imports	1,331.0	700.0	725.68	766.3	954.05

Source: State Bank of Pakistan

Cellular Mobile Services

The pace of global cellular mobile growth has been tremendous over the last decade. Currently, more than 90% of world population has access to cellular mobile services, which was just 61% in 2003. Over 6 billion cellular mobile subscription worldwide has made cellular mobile the most ubiquitous technology. Developing countries have taken the lead in the adaption of cellular technology and 77 percent of world cellular subscribers are in the developing world. The cellular mobiles have reached to the bottom of the pyramid just not as a communication device but also helping them in their businesses and economic well being through range of mobile applications and value added services. In fact, the mobile revolution has entered into a new era of innovation and value added services where mobile can be used to stimulate growth, entrepreneurship and productivity throughout the economy.[3]

Pakistan is one of the leading emerging economies in terms of coverage, service quality and accessibility of cellular mobile services in the developing world. After the deregulation in 2004, mobile sector of Pakistan has remained one of the dynamic economies in terms of cellular penetration growth. Now Pakistan's mobile market is going beyond voice and a large number of mobile phone applications and innovative business models have been developed to provide various value added services through mobile phone handsets. In particular, mobile banking initiatives by cellular mobile companies have been appreciated at international forums. Government and PTA are encouraging the use of mobile applications to transform delivery of basic services. The regulator has been successful in negotiating with mobile operators to offer mobile applications developers 30%-50% of mobile application revenues, which was previously 20%.[4] Mobile applications with local content, best suiting domestic requirements, can help meet development challenges in the country.

During FY2012, mobile sector of Pakistan performed relatively better compared to previous two years of slow growth. Cellular mobile subscribers have crossed the mark of 120 million with a net addition of 11 million subscribers during FY2012 and mobile penetration reached 68.5% at the end of June 2012. Despite continued slow economic growth, heavy taxes and intense price competition, cellular mobile operators managed to earn total revenue of Rs. 298.5 billion during FY2012, with a healthy growth of 14% from the previous year. Average Revenue Per User (ARPU) per month in terms of Pak Rupees increased to Rs. 214.8 during FY2012 compared to Rs. 209.3 in previous year.

Table - 4
Regional Countries Mobile Penetration (%)

Countries	2008	2009	2010	2011	2012
Afghanistan	26.5	34.3	41.4	54.3	64.0
Bangladesh	30.7	35.7	46.2	56.5	62.0
China	48.3	56.0	64.0	73.2	75.3
India	29.1	43.5	61.4	72.0	75.2
Nepal	14.5	19.0	30.7	43.8	53.5
Pakistan	54.7	58.2	60.4	64.8	72.1
Sri Lanka	54.1	78.9	83.2	87.0	95.1

Source: ITU, PTA and websites of other regulators.

[3] http://www.itu.int/ITU-D/ict/
[4] Pakistan Telecommunication Report, Q2 2012, Business Monitor International

Operators improved their revenue streams through attractive packages and exciting value added services including mobile internet, mobile banking, payment of utility bills, information updates etc. On the investment side, operators invested US$ 212 million during FY2012. Although operators expanded their networks reasonably during the year, the network up-gradation remained slow due to the delay in spectrum allocation for 3G services in the country. Investments in mobile sector are expected to substantially increase when operators will upgrade their networks after the launch of 3G. The industry would get a new impetus through the auction of 3G spectrum which will facilitate the provisions of e-health, e-finance, e-government, e-agriculture and e-education.

Mobile Penetration

With a healthy subscriber growth during the FY2012, the mobile penetration in Pakistan has reached 68.39% at the end of June 2012, showing a growth of 5.8% over the last year. The growth in mobile penetration has been better during the last two years compared to FY2009 and FY2010, when mobile sector of Pakistan was negatively affected by devastating floods and global financial crisis. In 2008, the mobile penetration in Pakistan was the highest among the South Asian countries due to early initiatives of PTA to introduce competition and deregulation in the sector compared to other countries in the region. In recent years however, some countries in the region have overtaken the position of Pakistan. Since 2009, mobile penetration growth in Pakistan remained in single digit due to slow economic growth, market maturity and availability of only 2G services in the market. In this situation, rural markets provide opportunities for the cellular mobile operators to increase mobile penetration in these areas.

Figure - 10
Mobile Penetration in Pakistan

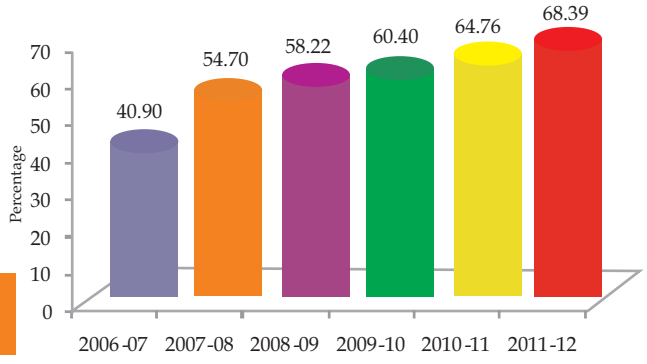


Table - 5
Mobile Penetration by Province (%)

Period	Punjab	Sindh	KPK	Balochistan
2007-08	57.9	62.1	36.3	27.1
2008-09	61.6	66.2	37.0	30.6
2009-10	62.9	69.6	39.1	35.0
2010-11	65.4	78.3	42.2	41.1
2011-12	68.1	84.0	46.2	45.9

Among provinces, as of end June 2012 mobile penetration is the highest in Sindh (84%) followed by Punjab (68.1%). Other provinces have less than 50% penetration i.e. Khyber Pakhtunkhawa (42.2%) and Balochistan (45.9%). Government and PTA have been encouraging cellular mobile operators to expand their networks in the province of Balochistan. Resultantly, Balochistan has been consistently showing the highest growth in mobile penetration among provinces over the last four years. Now Balochistan has mobile penetration close to that of KPK, whereas at the end of June 2008 Balochistan was 8.8 percentage point behind KPK in terms of mobile penetration.

Mobile Subscription

There were 120.15 million mobile subscribers at the end of FY2012 compared to 108.9 million subscribers last year depicting a healthy growth of 10.3% over the last year. Out of 120.15 million mobile subscribers, 115.89 million are pre-paid (98.40%) and 1.88 million post-paid (1.60%). The percentage of pre-paid in total subscribers has increased over the years i.e. increasing from 97.2% in FY2007 to a current figure of 98.4%. CMPak and Telenor are the two companies that have the highest ratio of pre-paid subscribers. Heavy reliance of cellular mobile market on pre-paid subscribers is the norm for emerging markets. There are two main reasons for a growing share of pre-paid subscribers in Pakistan. First, the new additions in the subscriber base mostly come from lower strata, which have more convenience in opting for pre-paid options. Second, cellular operators have introduced innovative tariff plans, easy recharge options, balance transfers and many attractive pre-paid packages that provide tariff plans customized to the needs of the users.

As of end June 2012, there were 66.79 million subscribers in Punjab, followed by Sindh (34.04 million), KPK (12.88 million) and Balochistan (4.06 million). The share of Punjab in total mobile subscribers has been declining over the last few years whereas the share of other provinces is increasing. This trend is partly due to upsurge in mobile subscription in the province of Sindh and Balochistan, in particular, during the last two years.

Figure - 11
Pre-paid and Post-paid as percentage of Total Subscribers

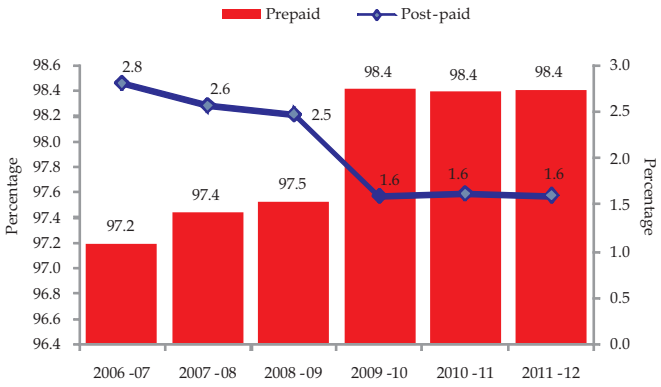
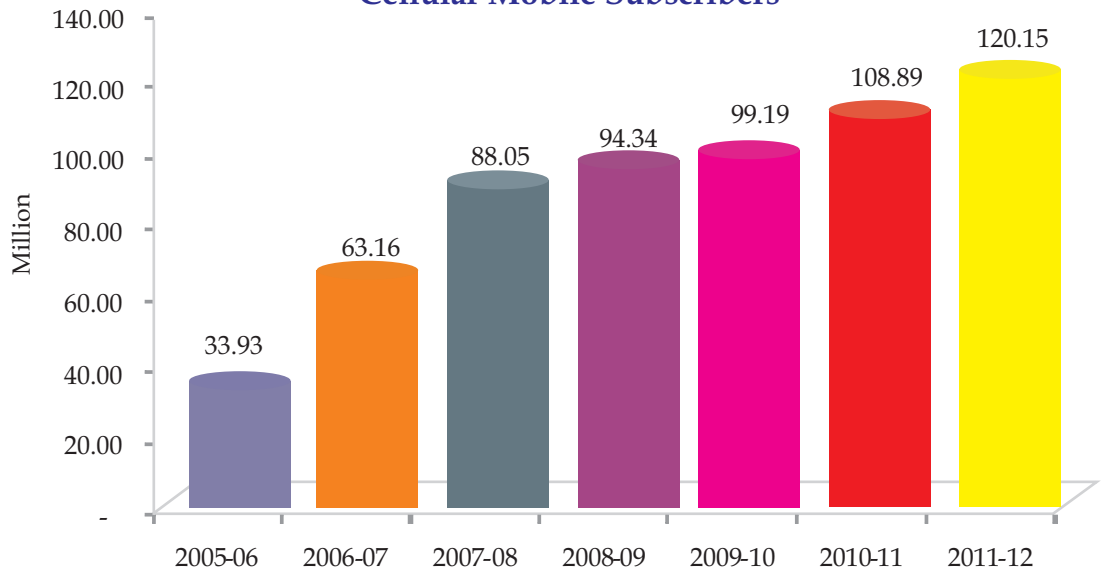


Figure - 12
Cellular Mobile Subscribers



Net Additions

During the FY2012, the cellular mobile operators of Pakistan with their aggressive marketing, attractive packages and special offers were able to add 11.26 million subscribers in the mobile subscriber base. This substantial net addition in subscribers have been achieved amid additional requirements by the regulator for SIM registration and activation, and other controls for prohibiting the sale of dual or no IMEI number. This shows that there has been smooth adoption of new procedures of SIM activation. Moreover, the net addition of FY2012 (11.26 million) is more than the combined net additions during FY2009 and FY2010 when the cellular mobile market was hit by floods and global financial crisis.

In fact, four market players Moblink, Ufone, CMPak and Telenor added 15.44 million subscribers during FY2012, however, Warid suffered significant loss of 3.9 million subscribers, and resultantly the mobile market ended up with 11.26 million net additions during the year. Interestingly, CMPak, the smallest player in the market with its impressive growth momentum added 5.91 million subscribers, which is more than double the net addition of 2.58 million by Mobilink, the largest player in the market. Ufone and Telenor added 3.36 million and 3.30 million subscribers respectively during the year.

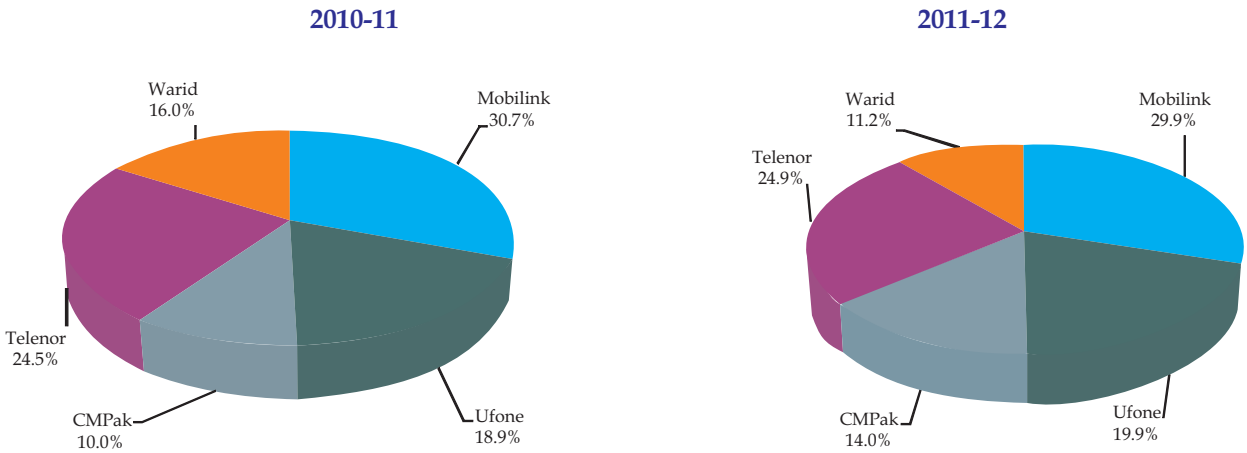
Table - 6
Net Addition in Cellular Mobile Subscribers

	Mobilink	Ufone	CMPak	Instaphone	Telenor	Warid	Total
2008-09	(2,895,524)	1,904,267	2,435,813	(287,086)	2,767,940	2,396,878	6,322,288
2009-10	3,065,708	(455,607)	317,717	(34,048)	2,905,092	(955,049)	4,843,813
2010-11	1,175,614	984,687	4,223,405	-	2,868,858	456,111	9,708,675
2011-12	2,575,273	3,363,474	5,909,290	-	3,296,644	(3,887,962)	11,256,719

Market Share

Mobilink, which has been the largest player in the mobile market of Pakistan, is losing its market share. The market share of Mobilink, which was more than 50% at the time of deregulation in 2004, has declined to 29.9% at the end of FY2012. The new player, CMPak, with its aggressive marketing has been able to achieve a market share of 14.4% in less than five years of start of its operations in Pakistan. Due to subscribers churn and intense competition from other operators, Warid is continuously losing its market share since FY2009 and currently has the lowest market share of 11.2% among all cellular mobile operators.

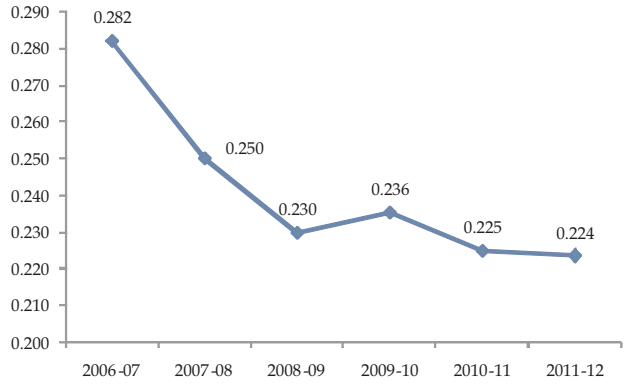
Figure - 13
Cellular Subscribers Share



Competition in the Cellular Market

Cellular market of Pakistan is enjoying a healthy competition. The structure of the market with respect to subscribers and revenue shares has been getting more competitive over the years. The Herfindhal-Hirschman index (HHI), a commonly used measure of competition in the market has been calculated for the Pakistani cellular market on the basis of subscription as is shown in Figure - 14. HHI close to zero shows a perfect competition in the market and HHI closer to one indicates a case of monopolistic structure in the market. The calculated HHI for the mobile market of Pakistan is depicting a declining trend, which shows that the competition has increased in the market over the last years.

Figure - 14
Herfindhal-Hirschman Index
(a measure of competition in the market)



Note: The index closer to zero shows perfect competition

Network

The cellular mobile network is covering over 92 percent of the land area of Pakistan. Cellular mobile companies have expanded their networks to every nook and corner of the country. After two years of relatively slow network growth, cellular industry has shown a healthy growth of 8.4% in cell sites during FY2012. At the end of FY2012, there were 33,920 cell sites in Pakistan compared to 31, 303 cell site last year, with a net addition of 2,617 cell sites during the year. With the network expansion, mobile operators have higher coverage of Tehsil Headquarters. Interestingly, new operators have larger Tehsil coverage: Telenor has the highest coverage with its network covering 533 Tehsil H/Qs followed by CMPak covering 505 Tehsil Headquarters.

Figure - 15
Cell Sites

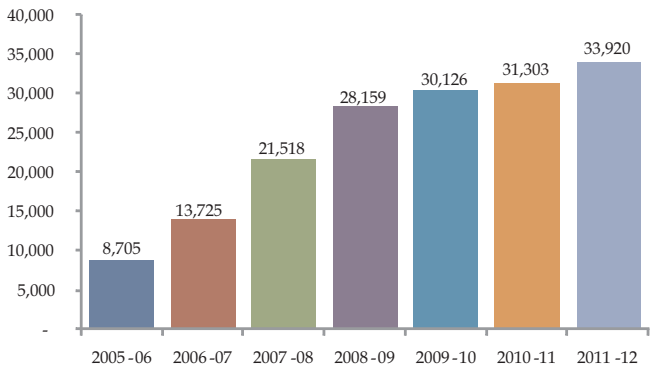
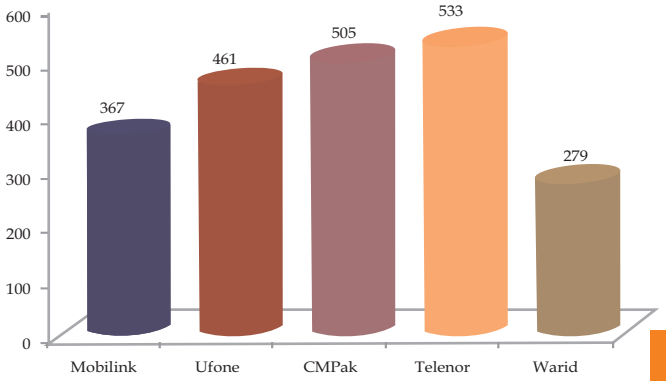


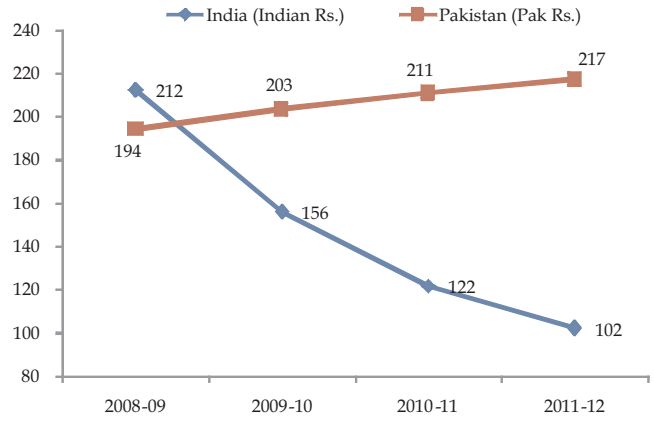
Figure - 16
Tehsil H/Qs covered by Cellular Mobile Operators (As of June 2012)



Average Revenue per User

Pakistan's cellular market is performing well in terms of Average Revenue per User (ARPU) per month. During FY2012 ARPU per month in Pak rupees was Rs. 217 and has shown a slight upward trend during the last four years. In comparison, the ARPU per month in the Indian cellular market has declined sharply from Indian Rs. 212 in FY2009 to Indian Rs. 122 in FY2011 showing a decline of 43%. Cellular mobile operators in Pakistan have improved their per subscribers revenues despite large addition of low income users in the mobile subscriber base and aggressive price competition in the market. Cellular mobile operators can increase ARPUs through additional data revenues by offering non-voice services like mobile banking.

Figure - 17
Cellular Mobile Average Revenue per User /Month

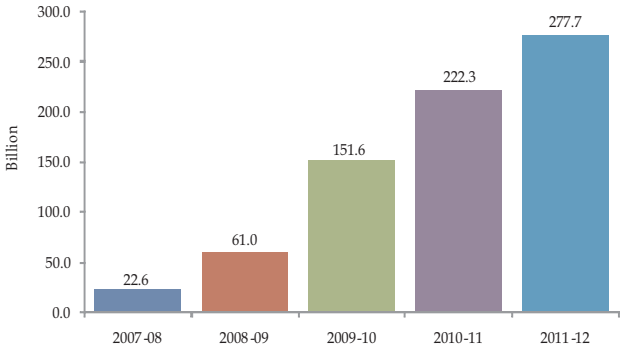


Source: PTA and Cellular Operators Association of India
Note: Estimated Indian ARPU for the year 2011-12

Traffic

In recent years, the cellular market of Pakistan has seen cut throat competition in voice and SMS tariffs. Mobile operators continued to offer attractive packages including free calls and unlimited SMS. These packages have resulted in huge increase in voice and SMS traffic (see Figures 18 to 20). An increasing number of value added services in Pakistan including financial services and information services are mostly SMS based and have also contributed to the increase in SMS traffic. For example, mobile banking services in Pakistan are SMS based and completion of each financial transaction involves multiple SMS generation. The use of SMS is prevalent among the mobile subscribers in Pakistan, therefore, mobile operators are designing new services based on SMS usage. At a time when revenues from traditional voice services have slowed down, mobile operators are aggressively introducing value added services to increase their revenues. This has resulted in huge increase in SMS traffic. During FY2012, a record 277.7 billion SMSs were exchanged by the mobile customers, showing an increase of 25% from previous year.

Figure - 18
SMS by Cellular Mobile Operators



The voice traffic of cellular mobile market has shown tremendous growth over the last few years. In particular, cellular mobile outgoing traffic to cellular network has reached 192.9 billion minutes in

FY2012 with an increase of 40% from the previous year. The substantial increase in the cellular mobile minutes is due to an increasing number of cellular tariff packages with unlimited call offers on the same network. International incoming traffic on cellular network has also reached 15.1 billion minutes during FY2012, a sharp rise of 119% over the last year. National cellular traffic to fixed networks has declined over the recent years due to significant increase in the use and penetration of cellular mobiles in the society. In FY2012, 2.6 billion national outgoing cellular minutes were terminated on fixed networks compared to 2.9 billion minutes in FY2010.

The voice and SMS traffic per subscriber per month is provided in Figures 21 & 22. In Pakistan, on average, a cellular mobile subscriber is making outgoing voice calls of 141 minutes per month whereas generating 200 SMS, which translates to 5 minutes of outgoing voice calls per day and almost 7 SMS per day. During FY2012, there has been higher growth of 24.4% in SMS per subscribers compared to growth of 12.6% in outgoing voice minutes.

Figure - 19
National Cellular Mobile Outgoing Traffic

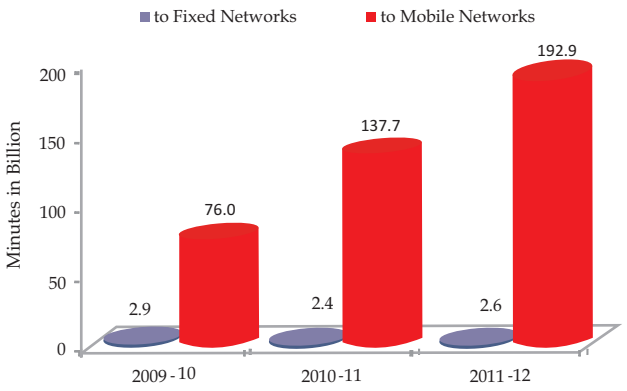


Figure - 20
International Cellular Mobile Traffic

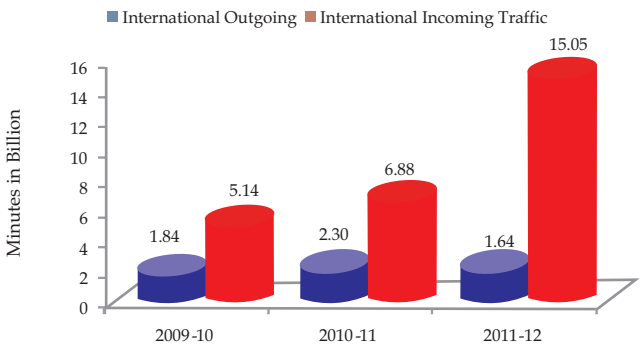


Figure - 21
Average SMS/Subscriber/Month

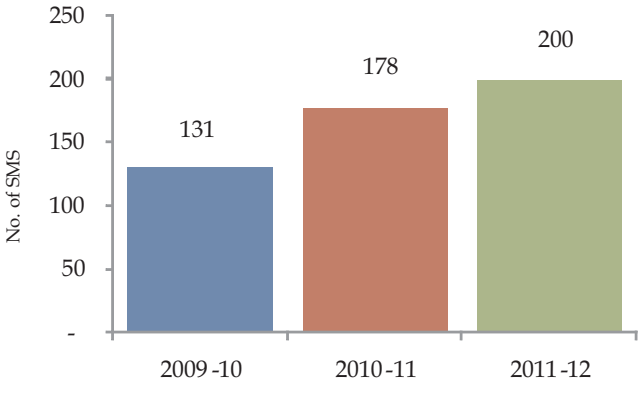


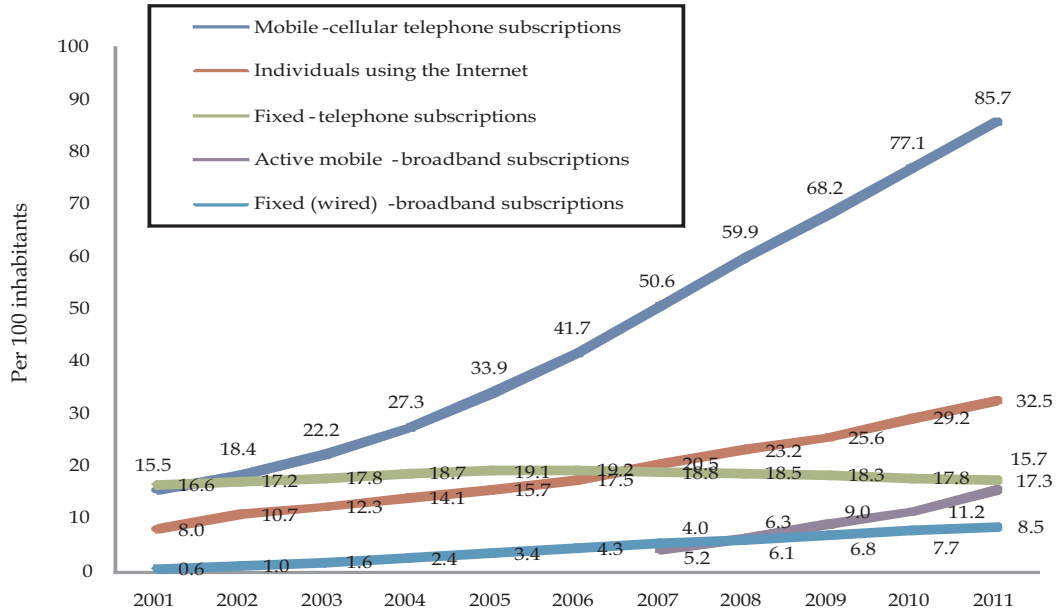
Figure - 22
Average Outgoing Minutes /Subscriber/Month

Basic Services

Basic services include fixed local loop (FLL), wireless local loop (WLL) and long distance international (LDI) services. PTA deregulated the telecom sector in 2004 by introducing effective competition in the local loop sector so that new operators could establish themselves in the market and ultimately break the monopoly of PTCL. However, due to exponential rise in cellular adoption and delayed roll out of new operators' networks, the desired results could not be fully achieved. The incumbent holds significant share of the market while penetration level still remains dismal. PTA is cognizant of the situation and striving hard to elevate the penetration level of the local loop services. LDI industry, on the other hand, is progressing at a rapid pace as record number of incoming and outgoing minutes was recorded on the LDI networks during the FY2012.

On the global front, fixed local loop services have been extensively strained over the last decade due to rapid advancements in the wireless arena especially cellular mobile services and online communication facilities. According to ITU's World Telecom/ICT Indicators Database as shown in Figure - 23, global fixed line subscriptions have dropped to 17.3 per 100 inhabitants from 19.2 per 100 inhabitants during the last five years. During the same period, mobile cellular subscriptions have increased from 33.9% to 85.7% which marks the high success of mobile services globally. Internet usage has also more than doubled over the last five years as mobile broadband subscriptions are also growing faster than the fixed broadband services. The world is increasingly shifting towards wireless communication solutions as a clear difference exists in fixed and mobile broadband subscriptions trend.

Figure - 23
Global ICT Developments, 2000-2011



Source: ITU World Telecommunication /ICT Indicators database

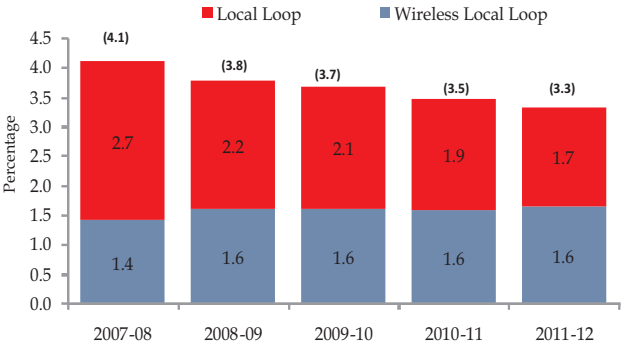
Local loop services in Pakistan, especially FLL, are highly dependent on incumbent. PTCL has over 6 million installed fixed lines capacity of which 53% lines are in use as of June, 2012. The company kept up its attempts to win back customers by introducing new offers to landline customers. A number of packages such as *Freedom, Double Balance, and Sunday Offer* were rolled out to target the various needs of customers. The company also launched an SMS complaint system where a user can lodge complaint about his/her landline number via SMS thereby avoiding the hassle of calling helpline services. The company has also vowed to invest Rs. 100 billion in the Pakistan market in the next five years which is welcome news for the development of local loop sector and broadband[5]. The company vows to extend the reach of its services to provide fixed line and broadband to five million people in the near future.

In terms of subscribers, WLL sector is showing steady progress as subscriber base has increased in the FY2012. PTCL, WorldCall and Wateen have performed very well in WLL segment by adding high number of subscribers in FY2012. FLL sector, on the other hand, lost subscribers mainly due to decline in PTCL's fixed line customers. Other operators in FLL like NayaTel and NTC managed positive additions to their subscriber base.

Teledensity

Local loop teledensity of Pakistan has been declining for the last few years despite several efforts from PTA to introduce healthy competition in the market. The global decline of fixed line connection owing to substitution effect caused by cellular mobile services has also been witnessed in Pakistan. Currently, teledensity combining fixed and wireless local loop services stands at 3.3% in Pakistan as of June, 2012 as compared to 3.5% at the end of same period last year. The decline can mainly be attributed to falling teledensity of FLL services from 1.9% in 2011 to 1.7% in 2012 as evident by Figure - 24. Although WLL subscriber base also increased, WLL teledensity has remained exactly the same for the last four years i.e. 1.6% as the increase in subscribers is offset by the population increase each year. The differentiating factor in the contrasting trend of FLL and WLL sectors is mainly due to performance of PTCL.

Figure - 24
Local Loop Teledensity



Subscribers

The total local loop subscriber base including fixed and wireless stood at 5.87 million at the end of FY2012. The LL industry has grown by 1.5% during the last year after successive decline in the last two fiscal years. In the FLL sector, a slight decline in subscriber base i.e. 31,219 has been witnessed with 2.99 million subscribers as of June, 2012. On the other hand, WLL subscriber base increased by 112,814 thereby reaching a

[5]http://www.brecorder.com/component/news/single/592/0/1141018

total of 2.88 million subscribers at the end of FY2012. The positive growth in subscribers achieved during the reported period is a result of strong performance of PTCL, Wateen and WorldCall mainly in the WLL sector. However, the overall affect of the subscriber addition on the teledensity figures was minimal because of subsequent population increase.

PTCL remains to be the dominant player in both the FLL and WLL sector with more than 74% share in the overall local loop subscriber base. Although PTCL's FLL subscriber base declined by 34,087 in FY2012, the magnitude was much smaller than that of previous years. On the other hand, its WLL subscribers increased by 70,528 thereby keeping the overall net additions of the company on the positive side of the scale. Other FLL operators like NTC, NayaTel, WorldCall and Brain had slight fluctuations in the subscribers base as NTC added 1,141, NayaTel added 1,211, WorldCall declined by 225 and brain added 796 subscribers during FY2012.

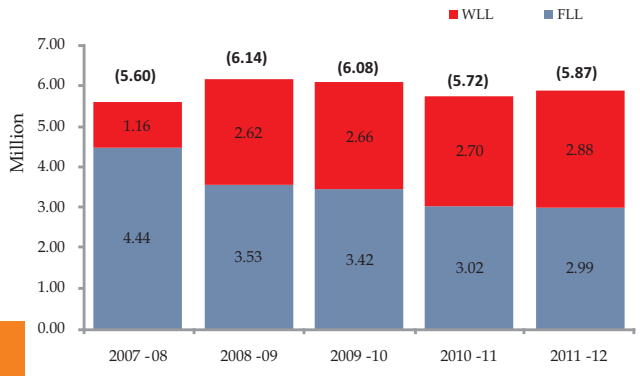
WLL sector shows a more encouraging picture to that of FLL as major WLL companies managed to get respectable inductions in their subscriber base. PTCL is the main contributor to the growth of WLL sector during FY2012 as the company added 70,528 new subscribers. Wateen and WorldCall also performed well as the companies added 24,077 and 20,979 new subscribers during the reported year.

Long Distance and International

Long Distance and International (LDI) services are the communication bridge that keeps Pakistan connected to the rest of the world via submarine fiber optic and satellite links. LDI operators carry millions of voice minutes every day, to and from Pakistan via multiple undersea and over the air links.

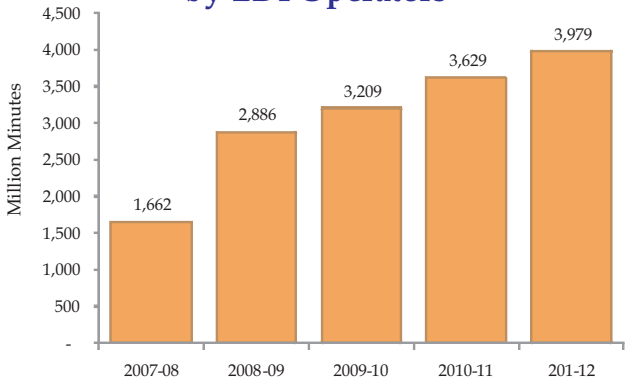
The total international traffic (incoming plus outgoing) reached an all time high 20.2 billion minutes during the FY2012 as compared to 11.3 billion minutes in the previous year thereby achieving 79% overall growth. This huge rise in the growth is mainly due to exponential rise in the incoming traffic on the LDI networks. The outgoing traffic on the LDI networks

Figure - 25
Local Loop Subscribers



Note: 2010-11 Revised

Figure - 26
International Outgoing Minutes by LDI Operators

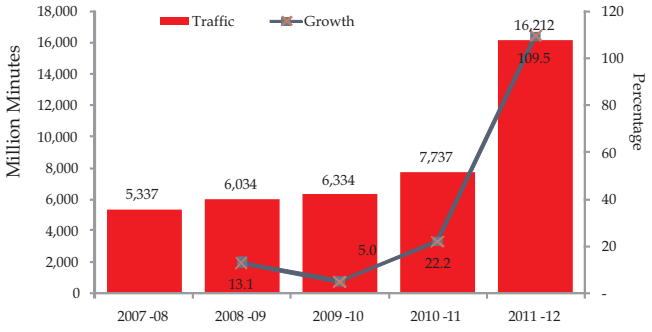


Note: 2010-11 Revised

grew steadily by 10% with 3.9 billion minutes recorded during the FY2012.

A highly steep rise in the total incoming international minutes has been witnessed in the FY2012 as depicted in Figure - 27. A total of 16.2 billion minutes have been carried by LDI operators to the country, the highest ever since the commencement of LDI services in Pakistan. If compared with 7.7 billion minutes recorded in FY 2010-11, a stunning growth of 109% has been achieved in the total international traffic minutes by LDI operators.

Figure - 27
International Incoming Minutes by LDI Operators

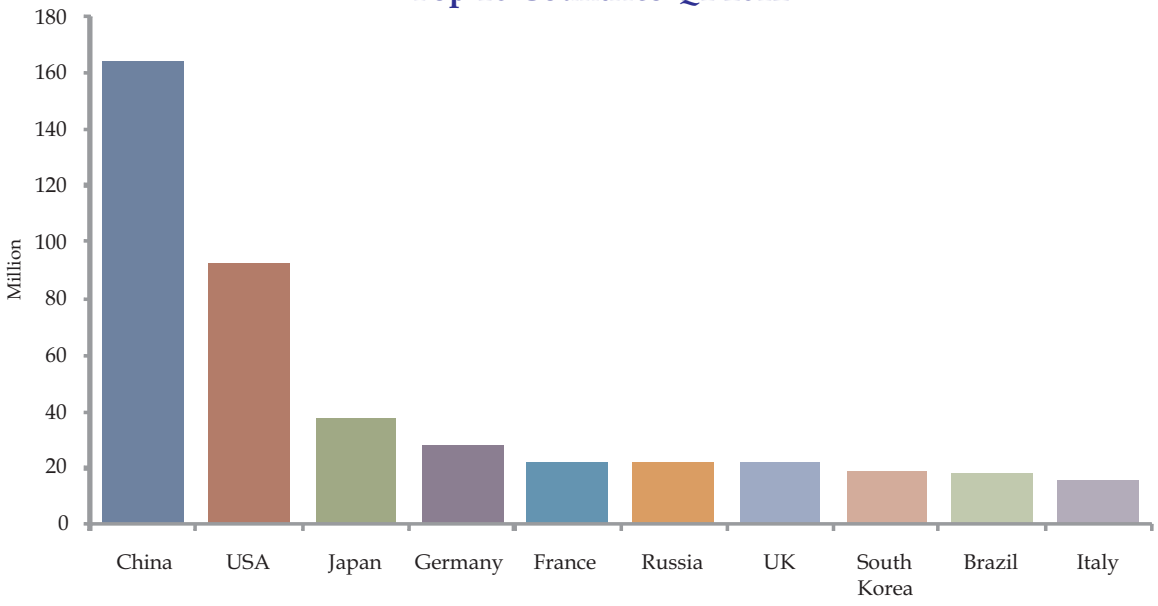


Broadband

Broadband is more than a communication technology; it is a significant economic stimulus for any country as changing dynamics of the world economy rely heavily on well connected economic resources of a country. Advanced content, high quality mediums, reliable infrastructure and well linked information repositories determine the future of country's economy by providing right information delivered through reliable and secure communication channels at the right time.

The global technological trend has shifted from voice to data services, with broadband being the backbone of service delivery. Telecom companies are putting strong emphasis on providing innovative applications, customized solutions, value added services and local content as part of the drive to find new revenue streams. Today, there are 600 million broadband subscribers worldwide as of Q1, 2012.

Figure - 28
Total Broband Lines Top 10 Countries Q1 2012



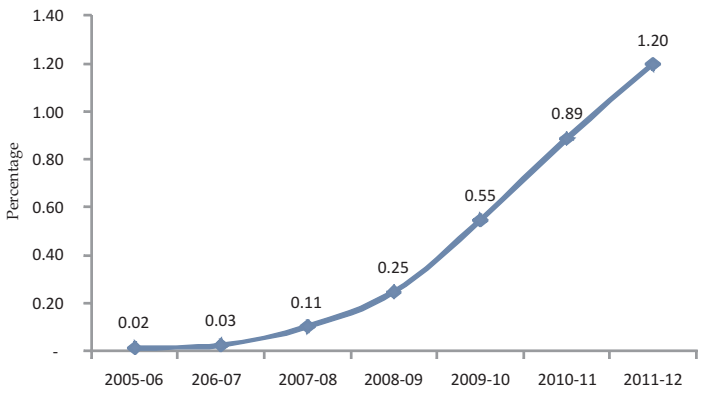
China leads the world broadband market followed by USA, Japan, Germany and France. In terms of technology, DSL has more than 60% of the world's broadband subscriptions while Cable Modem covers 19% and Fiber holds 18% share.[6]

Broadband in Pakistan is an example of a competitive, technologically advanced, well regulated and consumer friendly market. Government of Pakistan has extended full support to telecom sector especially broadband, by spending Rs. 22 billion on rural telecom development through USF.[7] Some of the fruits of this spending include 7400 km of fiber optics laid in far flung areas, almost half a million free broadband connections, connectivity to thousands of small towns/villages, provision of internet to educational institutes and libraries and subsidized broadband rates in project areas. Moreover, the Prime Minister of Pakistan has already announced that Government plans to allocate Rs. 17 billion in next year's budget for stretching the broadband services further in un-served and under-served areas of the country.[8] PTA kept a technology-neutral licensing regime thereby facilitating influx of latest broadband technologies such as WiMAX, EvDO, VDSL2, in addition to existing infrastructure of DSL, HFC, FTTH, Satellite etc. The operators are churning out new service plans and providing customer incentives to increase their subscriber base. Although the penetration level is steadily rising, broadband infrastructure development is just one of the several key factors to be addressed. Low literacy rate, lack of local content, cost of entry, price of computer/smart phone and awareness of the general public are other areas which need concerted efforts from the industry and regulator alike.

Penetration

Penetration level of broadband services in Pakistan has been progressing at a leisurely but steady pace. The current penetration of broadband was 1.2% at the end of FY2012 as compared to 0.89% as of June, 2011. Although the broadband net additions and growth rates have been satisfying, coordinated efforts are required by the regulator, industry and the Government to address several key factors that are hindering the penetration of broadband in Pakistan. These factors include high cost of entry, low literacy level, lack of awareness, poor fixed line infrastructure and social concerns. PTA regularly addresses these bottlenecks by holding various seminars, conducting research studies, providing regulatory facilitation to the licensees and keeping the QoS in check.

Figure - 29
Broadband Penetration (%)

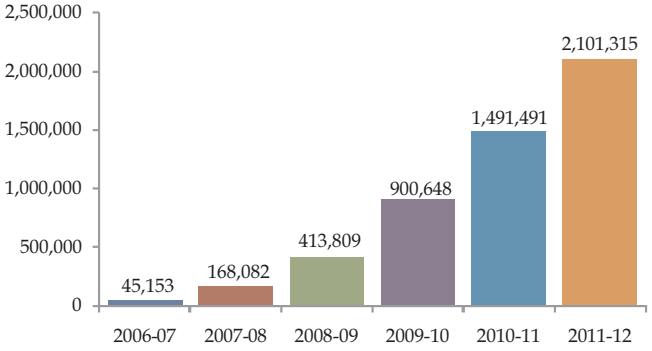


[6]http://point-topic.com/press.php
[7]http://www.usf.org.pk/News.aspx
[8]http://www.pakistanpressfoundation.org/information-technology/51825

Subscriber Mix

Broadband subscribers crossed the two million mark in just a few years since competition was first introduced in Pakistan with commercial launch of Wateen in 2007. This year, the broadband industry added the highest number of subscribers ever while average annual growth rate remained above 100%. It shows that Pakistan's broadband market has tremendous potential for growth and investment and PTA vows to fully cooperate with the investors in this regard.

Figure - 30
Broadband Subscribers

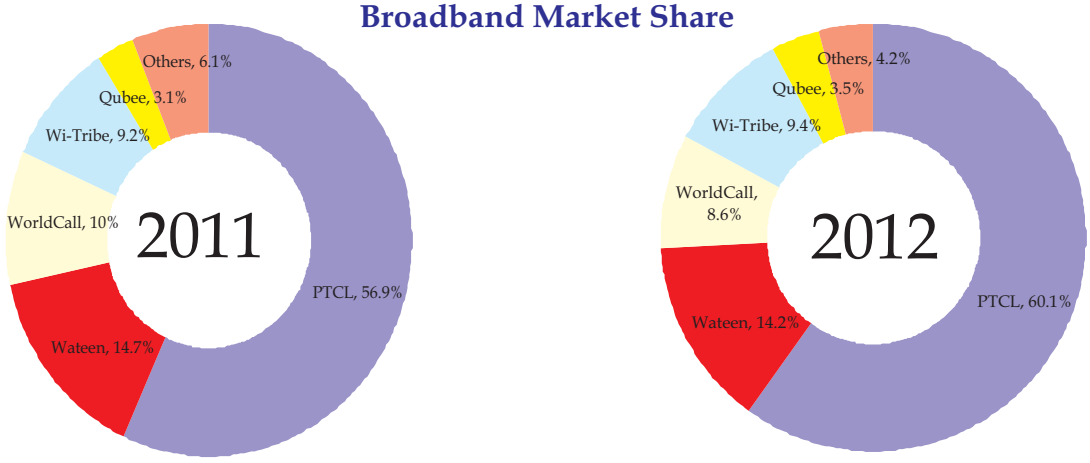


Currently, Broadband subscribers stood at 2,101,315 at the end of June, 2012 as compared to 1,491,491 last year. The average annual growth rate of broadband services for the last five years approximates to 127%. The 41% growth rate of FY2012 was slightly less than that of the previous year however the number of net additions reached an all time high with 609,824 new subscribers joining the broadband networks last year.

Broadband Players

PTCL; SMP of the broadband market, offers both fixed and wireless broadband services in the country. The company further strengthened its position in the FY2012 by claiming 60% share in the broadband market, up from 57% the previous year. The incumbent has 1,262,732 subscribers as of June, 2012 depicting a growth of 49% during last fiscal year. Wateen revamped itself in October last year, and results proved fruitful as the company posted 36% subscriber growth in the last fiscal year reaching 297,503 subscribers and claiming 14.2% of the market. WorldCall, the third biggest company with 181,311 subscribers saw a decline in its market share and growth rate owing to churn during the last fiscal year. Wi-Tribe, after launch, made an immediate impact in the market but the growth slowed down in FY2012 as market share of the company

Figure - 31
Broadband Market Share



remained the same at 9%. The operator has 197,151 subscribers at the end of June, 2012 with 44% growth during the last fiscal year. Qubee depicted the highest growth rate of 58% among all the operators during the last fiscal year as the company increased its subscriber base to 72,893 and claimed a 3.5% stake in the market.

Broadband Technology Trends

Pakistan's broadband market is a true blend of latest and primitive technologies both in the fixed and wireless categories. An interesting trend has been witnessed over the last few years in the broadband market where wireless technologies have taken over major share in just four years as depicted in Figure - 32. The mobility option, quick delivery and dismal quality of fixed line infrastructure in the country paved way for the success of wireless technologies despite the higher cost of entry. Since 2009, wireless technologies have increased their market share from 32% to 56% thereby surpassing fixed line technologies in 2012.

Analyzing individually, DSL still has the highest stake in broadband market with 42% of the subscribers while WiMAX and EvDO are in close contest with a share of 28.1% and 27.8% respectively.

Figure - 32
Broadband Technology Share

Broadband Speed

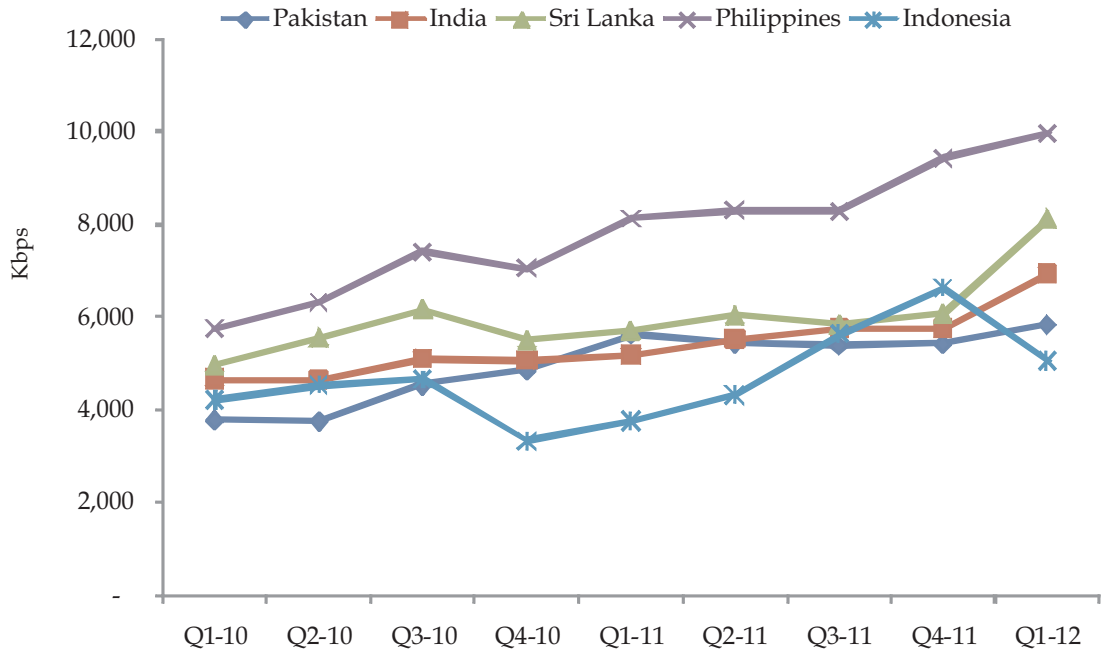
Broadband Speed is the foremost factor which distinguishes broadband from dial-up and other internet communication platforms. It plays a vital role in determining the overall quality of a connection and customer's adoption of broadband. Pakistan has a wide array of broadband speeds available to customers via fixed and wireless mediums. However, the connection speeds still requires concerted efforts in order to compete with neighboring countries. According to akamai's state of the internet report[9], Pakistan has room for improvement in average connection speed comparison with relative economies. Although the trend is upward, countries like Sri Lanka and India have gained substantial advantage over Pakistan in the last year. Pakistan, however, is en route for better connection speeds with fiber optics being laid across the country via USF projects and better utilization of spectrum policies.

Broadband Tariffs & Offers

Healthy competition in the broadband market gives birth to introduction of new products and services at affordable tariffs in Pakistan. Operators kept introducing new packages and tariff plans to cover every possible segment of internet users in the country. PTCL introduced 'PTCL Jadoo' which provides uninterrupted connectivity by using wired DSL as a primary connectivity while a wireless connectivity as a backup. On the wireless front, PTCL introduced WiFi cloud on both EvO and EvO Nitro as well as free WiFi on Business Express trains. Wateen, after its re-launch, introduced a re-activation offer where a customer can re-subscribe to service by paying no extra charges and 50% off on the line-rent. Wateen is also providing free WiFi hotspots at educational institutes, hospitals etc. Wi-tribe offered free internet on weekends as part of its 'Summer Hungama' offer while also offering gifts/incentives for dormant

Figure - 33

Average Connection Speed (1 Mbps)



[9] http://www.akamai.com/stateoftheinternet/

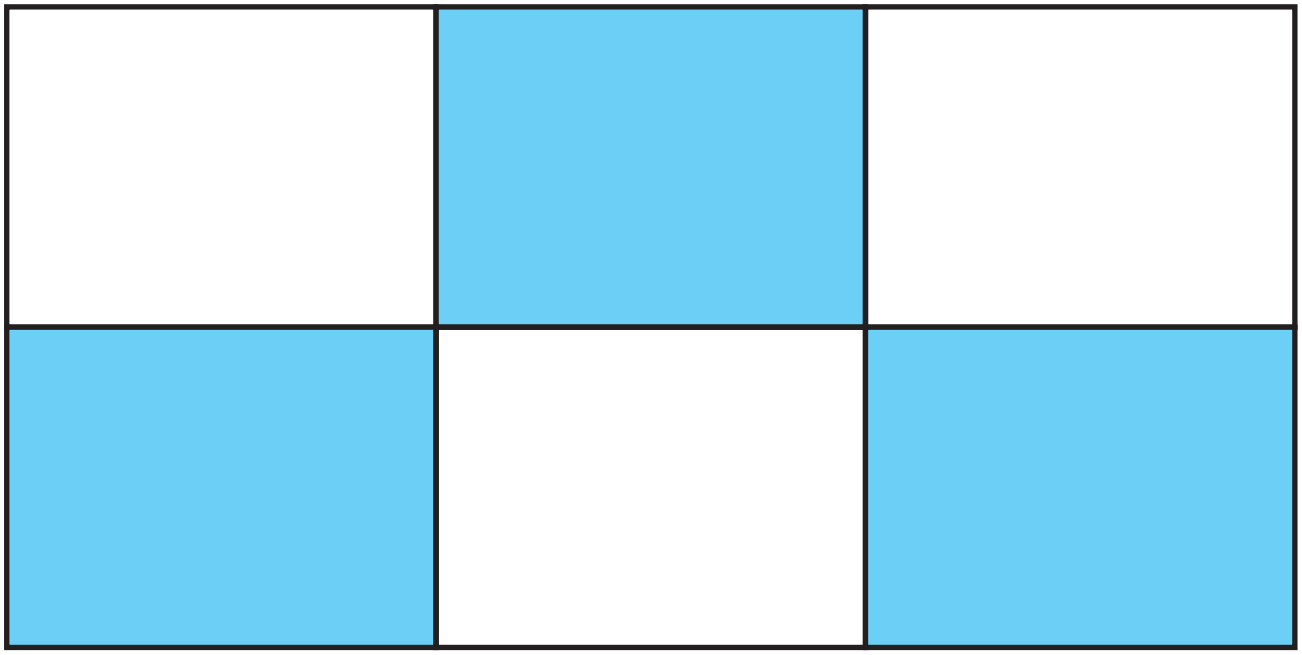
connection holders. Qubee launched the 'Triple Dynamite' offer which provides all new & existing customers with three times the volume of their chosen package. Apart from these, Cybernet and Comsats started offering cloud hosting and Virtual Private solutions for business companies in Pakistan.

Broadband Quality of Service

Quality of service is not only a license obligation but an important business essential for the operators around the world. PTA believes in proliferation of broadband but not at the expense of quality, therefore, QoS parameters of broadband networks are constantly monitored through countrywide surveys and inspections. PTA also devised Broadband Quality of Service (QoS) Regulations, 2011 in order to have a comprehensive regulatory framework to ensure quality of service. PTA conducted first broadband QoS survey in 2010 and continuing the tradition, another survey was conducted in 2011. 1Mbps package was selected for the survey purpose and Key Performance Indicators (KPIs) were analyzed against results. The survey was conducted in major cities of Pakistan and city-wise rankings of operators were given for information of general public.

Chapter 3

Telecom in Azad Jammu & Kashmir & Gilgit Bultistan



Special Communications Organization (SCO) started operations in 1976 with a total of 400 lines. It had exclusivity in AJK and GB till the deregulation of cellular sector. The operator literally owned all the long haul and access network resources in the area. It was hoped that SCO shall play a pivotal role in the boom of telecommunication infrastructure in the region and for about 24 years, the SCO provided telecom services to 3.5 million people of AJK and 1.5 million residents of GB, covering a combined area of 158,289 Sq. kilometers.

On 8th October, 2005 earthquake in Northern Pakistan damaged and disrupted life and services in the affected areas. In four Districts of AJK and five in Khyber Pakhtounkhwa (KPK), public and private housing, social service delivery, governance structures, communication etc. was either severely damaged or completely destroyed. Until the catastrophic earthquake, the SCO maintained its monopoly being the single largest telecommunication network provider in AJK and GB. However, later on, subsequent to the cabinet's decision for de-regulation of the sector in these areas in 2006, PTA issued licenses to certain Cellular, FLL and WLL companies, hoping that the step would augment the government efforts to extend the access of affordable telecom services to the underserved areas.

The deregulation of the telecom sector in AJK&GB brought about a revolutionary change which saw huge increase in subscriber base, teledensity and coverage area in the region. Today, telecom service providers have coverage in 56 Tehsil Headquarters of AJK & GB.

Provision of Telecom Services in Neelam Valley

To ensure access to the basic telecom services for the people of Neelam Valley, PTA has initiated the process of consultations with major telecom operators of AJK and GB. Owing to difficult terrain and close proximity with the border, this area requires special efforts by the companies.

In order to deal with the issue PTA initiated Cellular Village Connection Trial (CVCT) project at Attmuqam on 18th July, 2012. SCO successfully launched the project which is not only providing cellular

services to the people but also catering for the needs of the defense organizations. In order to extend the project up to Taobat, the last town of Neelum Valley, Universal Service Fund (USF) may be utilized. At present about 1.96 billion Rupees have been deposited by the telecom operators as USF for AJK which is more than sufficient to provide telecom coverage to all the important towns of the Neelum Valley.

Teledensity in AJK & GB

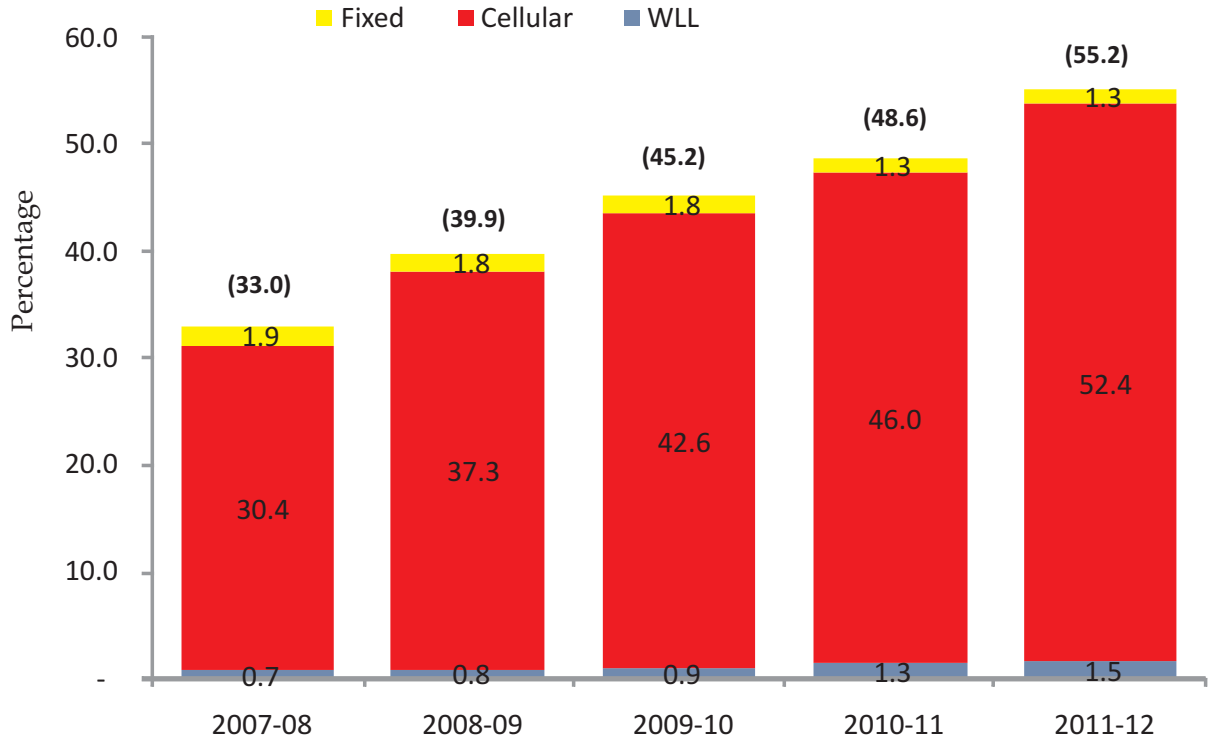
The stability and prosperity of AJK & GB is directly related to its economic strength, viable means of communication, investment friendly environment, competitive markets, strong institutions, and creative cities. Balanced development by mainstreaming the backward and less developed areas has been recognized as an important element of the development strategy. The Framework of Economic Growth calls for addressing these issues for fast and balanced growth in the region.

AJK & GB has observed consistent growth in teledensity during the last few years after introduction of competition in all segments of the sector. New operators have started their services in the region and cellular and WLL segments of the sector witnessed rapid growth. Mobile penetration has reached 52.4% followed by 1.5% WLL and 1.3% FLL. Total teledensity of all segments of telecom services stands at 55.2% at the end of FY2012.

Cellular Subscribers' Growth

Cellular mobile is the only segment that showed an encouraging growth pattern FY2012 for AJK & GB telecom sector.

Figure - 34
Teledensity in AJK & GB



Mobile operators kept on expanding their service areas for new subscribers to join the networks. In FY2012, the cellular mobile companies added over 338,731 subscribers with a growth of 22% during the year and made efforts to provide their services in far-flung and hilly areas in AJK & GB. The cellular industry has been growing at a remarkable pace since its launch, and the total subscribers' number reached to 2.77 million.

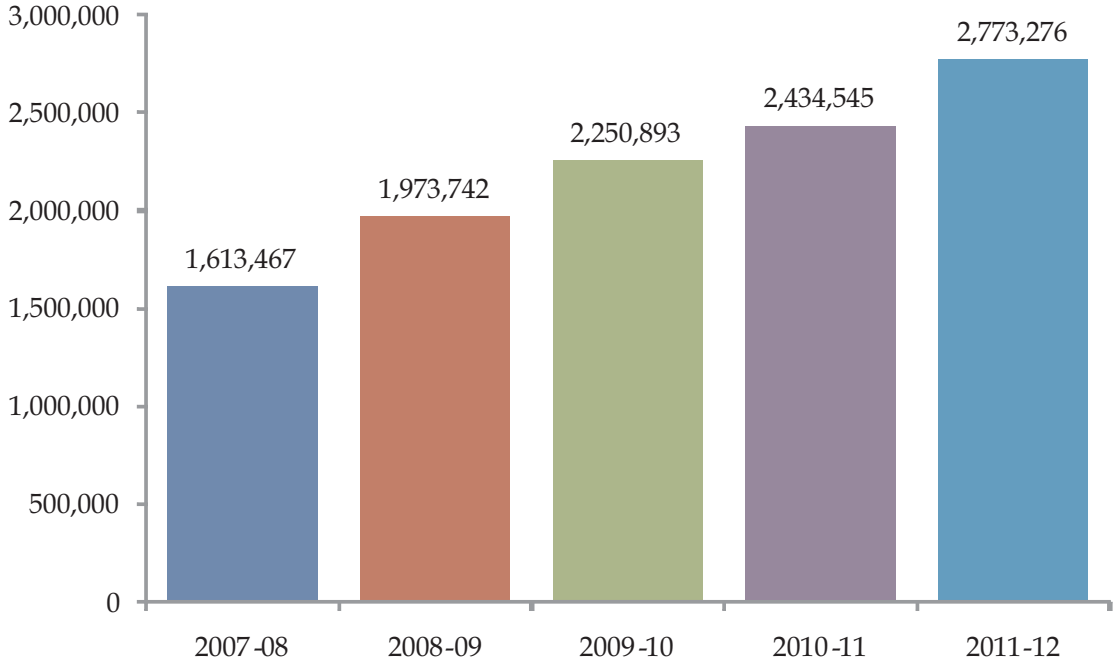
Table - 7
Cellular Mobile Subscribers in AJK & GB

	2007-08	2008-09	2009-10	2010-11	2011-12
SCO	126,000	285,072	346,762	320,734	394,064
Mobilink	575,660	474,147	594,180	488,077	503,342
Ufone	163,832	181,253	177,312	262,455	281,214
Telenor	533,054	699,600	743,600	901,231	1,112,283
Warid	200,421	224,298	204,161	208,303	149,114
CMPak	14,500	109,372	184,878	253,745	333,259
Total	1,613,467	1,973,742	2,250,893	2,434,545	2,773,276

PTA declared SCO as an SMP operator in the mobile market of AJK & GB. However, deregulation of AJK & GB has changed the market structure and subscribers have more choice, better options and attractive facilities like MNP. Analyzing the operator-wise growth rate of each operator by subscribers, CMPak leads with 31%. growth during FY2012. Telenor and SCO have also made strong impression showing a growth of 23.9% and 22.4% respectively, while Ufone grew by only 7.1%. After showing declining trend during FY2011, Mobilink grew by 3.1% this year. Warid is the only operator with negative growth, reporting a decline of 28.4%. The main reason of this decline is the loss/Churn of subscribers, low investment, no significant increase in network and aggressive marketing by the other competitors in AJK & GB.

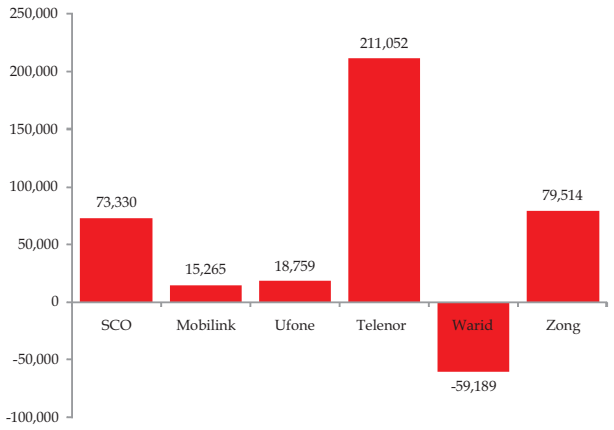
The sector added 338,731 subscribers during FY2012, however, Warid lost 59,189 subscribers during the year. The main contributor to this net addition was

Figure - 35
Cellular Mobile Subscribers in AJK & GB



Telenor which added about 211,052, while CMPak and SCO added 79,514 and 73,330 new subscribers during the year. Ufone and Mobilink indicate slow growth with 18,759 and 15,265 net added subscribers respectively during FY2012.

Figure - 36
Addition in Cellular Subscribers



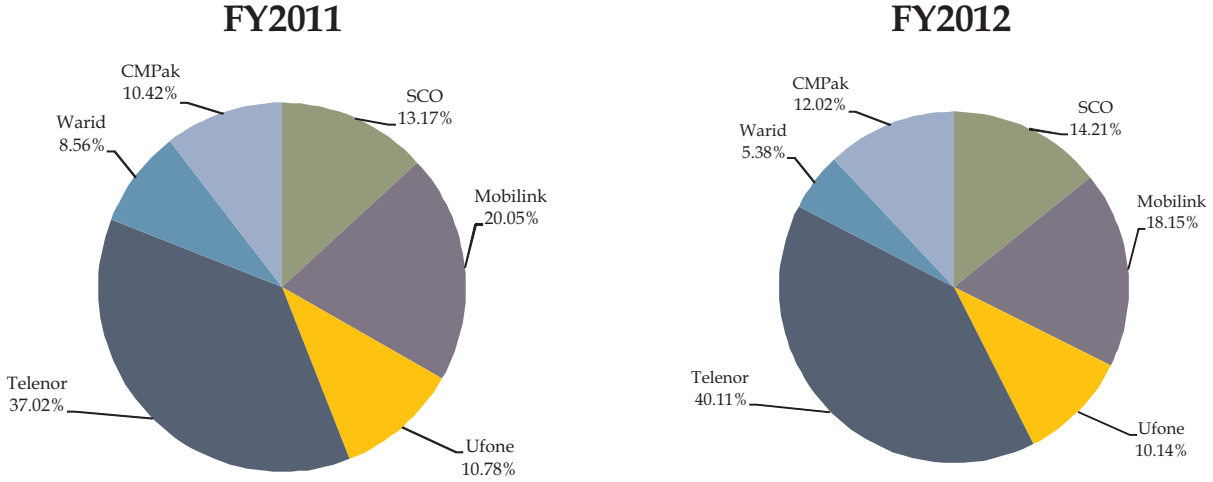
Market Share

The following shows market share comparison of subscribers of all six mobile operators in the region. During the year, some operators have lost their share in the total subscribers' base. Telenor has the largest mobile subscribers market share (40%) while, mobilink is holding the second spot with 18% followed by SCO with 14% subscribers' share. CMPak has shown relatively better performance by increasing its share from 10% in FY2011 to 12% in FY2012. Warid and Ufone have shown decreasing trend, losing share by 3% and 1% respectively.

Geographical Coverage

Intense competition, minimum tariffs and reduced investments by the operators could have resulted into less network expansion in the AJK&GB, however, contrary to that all operators continued to increase coverage across the region. With a strong encouragement by the PTA, the operators have started sharing of cell sites, which helped the operators to expand their networks. The operators quite courageously kept on increasing their cell sites except Mobilink. By end of the year, a total of 1,208 cell sites were across AJK and GB, up from 1,157 of the last year, showing a growth rate of almost 5%. There are 962 cell sites in AJK while GB is covered by 246 cell sites. Telenor has the maximum number of towers (392) in the area, followed by CMPak having 238

Figure - 37
Cellular Market Share in AJK & GB



cell sites. Ufone and Warid has 168 and 91 cell sites, whereas, Mobilink reduced its cell sites in AJK & GB from 226 to 181 during the year.

Following the deregulation of cellular mobile sector in AJK and GB in 2006, the industry has made tremendous progress there. Today, the six mobile operators cover almost 82% population in over 56 Tehsil Headquarters in AJK and GB. Of these destinations, 33 belong to AJK while the rest of the 23 are located in GB.

Table - 8
Cell Sites by Operator in AJK & GB

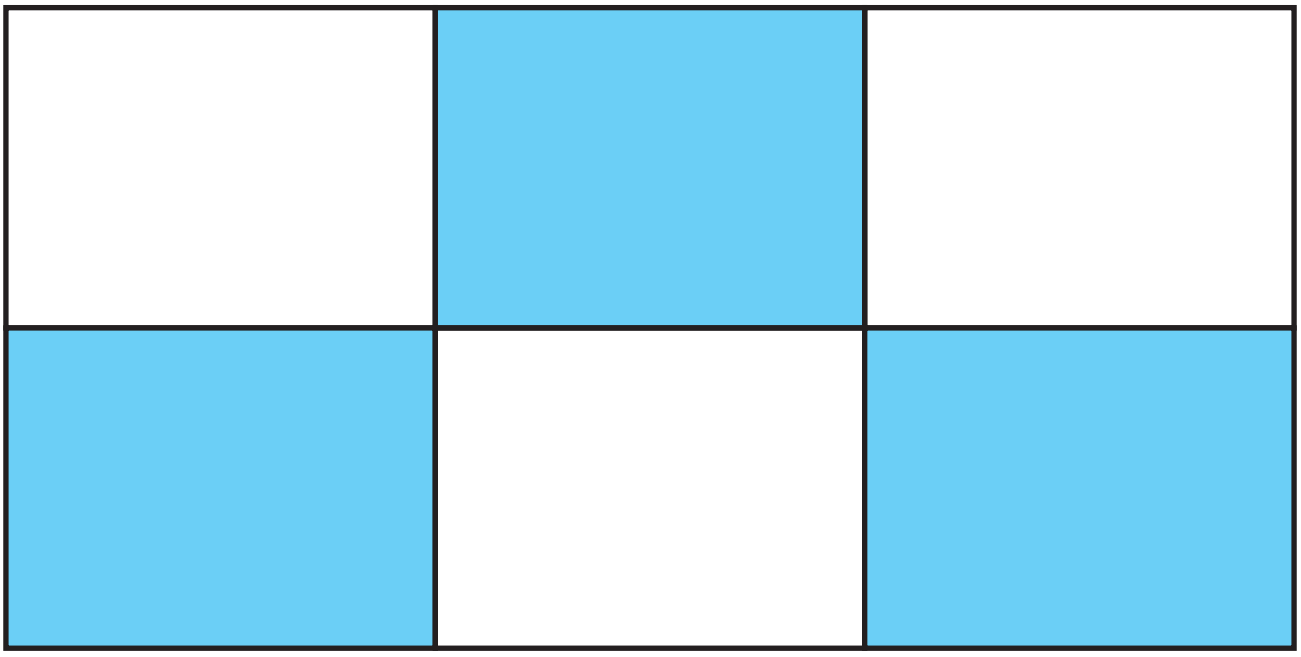
	2010-11			2011-12		
Company	AJK	GB	Total	AJK	GB	Total
Mobilink	152	74	226	152	29	181
Ufone	149	15	164	153	15	168
CMPak	153	60	213	175	63	238
Telenor	304	66	370	317	75	392
Warid	64	22	86	63	28	91
SCO	75	23	98	102	36	138
Total	897	260	1,157	962	246	1,208

Table - 9
Tehsil H/Qs covered in AJK & GB 2011-12

Operator	AJK	GB	Total
Mobilink	11	10	21
Ufone	15	10	25
CMPak	33	23	56
Telenor	22	17	39
Warid	13	10	23
SCO	19	10	29

Chapter 4

Keeping up with New Knowledge and Research



PTA is a progressive organisation with an aim of prudent regulation of the telecom sector of Pakistan. In order to perform its regulatory duties efficiently and professionally, PTA has always been active to keep itself informed and updated with the international developments in telecom regulatory policies and technologies. For the purpose, PTA continued to collaborate with several international and domestic organisations active in telecom policies, regulations and training. PTA has also signed MoUs with several local institutes of excellence in the fields of telecommunications, engineering and management to share each other's technical expertise. With the help of these collaborations, PTA officers also get benefited of trainings and knowledge sharing at international and national forums. Further, PTA conducts special in-house studies on evolving regulatory environments, fast developing telecom technologies and greater role of telecom in the economic development.

International Collaborations

PTA is committed to creating and enhancing its excellence in telecom regulations through collaborative arrangements with international institutions and organizations focusing on telecom regulations and training. Some of PTA's collaborating partners include International Telecommunications Union (ITU), Asia Pacific Telecommunity (APT), LIRNEasia, CGAP (Consultative Group to Assist the Poor), United States Telecommunications Training Institute (USTTI), South Asia Middle East and North Africa (SAMENA) Telecommunications Council, South Asian Foundation for Infrastructure Regulation (SAFIR) and Asia Pacific Network Information Centre (APNIC). PTA undertakes a range of international activities with these organizations including joint organization of forums, seminars, workshops and training.

ITU Centre of Excellence (CoE) in Pakistan

ITU established a Centre of Excellence (CoE) in PTA Headquarters in 2006 to conduct training courses on 'Telecom Policy and Regulation' for countries in Asia-Pacific region. ITU established CoE in PTA keeping in view the successful liberalization and deregulation of telecom sector in Pakistan and the expertise of PTA officers in the telecom regulations. Under the arrangements with ITU, PTA's senior officers conducted international trainings during FY2012 including ITU CoE Workshop on Mobile Quality of Service, held at Male, Maldives from 28th to 30th November 2011 and ITU CoE Training workshop on International Roaming Regulatory and Convergence Issues at Bangkok, Thailand from 7th to 11th May 2012. ITU/APT also invites senior PTA officers of its important international forums to share their knowledge on telecom issues.

PTA Collaboration with LIRNEasia

LIRNEasia, a regional think tank on ICT policy and regulation also has a long history of collaboration with PTA in the area of telecom regulations, performance of the telecom regulators and ICT based economic development. LIRNEasia is based in Sri Lanka and is funded by the World Bank, Department of International Development of the UK (DFID) and Canadian International Development Agency (CIDA). LIRNEasia is actively

conducting policy relevant research, training and advocacy across the Asia Pacific. Over the last few years, PTA has arranged several seminars/workshops in collaboration with LIRNEasia where international experts shared their knowledge with telecom community of Pakistan and telecom issues of importance were discussed. During FY2012, PTA in collaboration with LIRNEasia arranged a workshop on the role of telecom in agriculture, which has been applauded by national and international institutes working for the development of agriculture sector in Pakistan. A two days expert forum on "Mobile Applications" was also held by PTA and LIRNEasia in April 2010 and more than 40 international delegates and experts participated in the forum.

PTA Collaboration with CGAP

PTA is actively working to provide an enabling regulatory framework for mobile banking services in Pakistan. In order to get benefit from international experience of various mobile banking models, PTA has established collaboration with CGAP (Consultative Group to Assist the Poorest), a subsidiary of the World Bank based in Washington DC. CGAP is an international policy and research centre dedicated to advancing financial access for the world's poor, and has experienced the launch of mobile banking services in various countries around the world. With the assistance of CGAP, PTA arranged a workshop on mobile banking regulations in April 2012 at PTA Headquarters, Islamabad. Representatives of CGAP and State Bank of Pakistan (SBP) participated in the workshop. CGAP team provided their comments on the draft Mobile Banking Regulations and shared their views based on worldwide mobile banking models and experiences. Recently, CGAP has also published a report on the pathways towards Interoperability in the mobile banking sector of Pakistan. PTA has also planned to organize further workshops on mobile banking in Pakistan with the collaboration of CGAP.

Training Links with USTTI and APNIC

For a dynamic learning experience, PTA also has a long relationship with the United States Telecommunications Training Institute (USTTI), a training institute of international repute based in the United States. The institute offers more than 80 courses to almost 900 international participants annually. In the last few years, USTTI has sponsored several PTA officers for their trainings in broadband technologies, value added services and telecom regulations. The rich curriculum of USTTI provides knowledge of emerging technologies and regulatory challenges. In the FY2012, PTA has extended its international collaboration with Asia Pacific Network Information Centre (APNIC) to initiate some training workshops in Pakistan on emerging technologies in internet infrastructure. APNIC is one of the five Regional Internet Registries (RIRs), which are essential for reliable operation of the global internet. APNIC is actively involved in the development of internet infrastructure in the Asia Pacific region and provides training and education services. With the joint efforts of PTA and APNIC, a three days training workshop was held in Pakistan in July 2012 on Internet Resource Management, DNS Security Extensions (DNSSEC) and Internet Protocol version 6 (IPv6).

Seminars and Workshops

PTA promotes the modernization of telecom services in Pakistan and encourage the use of telecom based solutions and applications in the society. Through seminars, workshops and forums, the regulator creates awareness among consumers, operators and vendors about new technologies and their applications. During FY2012, PTA with its international and national partners arranged workshops/seminars on the role of telecommunications in agriculture, training on IPv6 and DNSSEC and broadband technologies.

Workshop on the Role of Telecommunications in Agriculture

PTA in collaboration with LIRNEasia organized a workshop on "What Can Telecommunications Do for Agriculture" at Serena Hotel, Islamabad on 3rd July 2012. The main theme of this initiative was to share international experiences and research with Pakistan, and to learn from successful telecom-agriculture models and improving agriculture productivity through increased usage of ICT. The event was well attended by representatives from agriculture organizations, international experts, agriculture consultants, policy makers, farmers associations, telecom operators, value added service providers, and donor agencies including World Bank, ADB, USAID, DFID working in the agriculture sector.

The speakers in the workshop including Dr. Rohan Samarjiva, CEO & Chair LIRNEasia and Dr. Kevin Callagher, representative of Food and Agriculture Organisation (FAO) of the UN, highlighted the importance of farmers' access to relevant information and adoption of ICT and telecom value added services by rural community, and presented various models of mobile/ICT applications currently being used for agriculture in Pakistan and other countries. The workshop provided a platform for organizations working in agriculture sector to discuss in detail the ways and means of generating benefits for agriculture by using telecommunication. PTA also showed its commitment to

extend all sort of support for the development of local content based mobile/ICT applications.

Workshop on IPv6 and DNSSEC

PTA in collaboration with Asia Pacific Network Information Center (APNIC) hosted a three days technical training workshop in July 2012 on Internet Resource Management, DNS Security Extensions (DNSSEC) and Internet Protocol version 6 (IPv6). The workshop was held from 18-20 July at local hotel in Islamabad. The objective to host this International training workshop was to provide a capacity building opportunity for technical community members.

This training workshop highlighted key essentials of Internet resource management. It focused on understanding the structures, processes, procedures and policies involved in requesting, allocating and managing Internet Protocol (IP) addresses and Autonomous System (AS) numbers. The deployment of DNSSEC was also discussed in detail with practical demonstration. This training workshop also focused on providing an understanding and hands-on exposure to IPv6, its structure, operation and technical features.

Seminar on "What's ahead in Telecommunication for Pakistan"

PTA and Teletimes International organized a Broadband Seminar on 15th September 2011 in Islamabad. The basic theme of the forum was proliferation of broadband technologies for creating new opportunities across all segments of society, along with its associated challenges and strategies. Chairman PTA, Member (Technical) PTA, Vice President of Middle East Region Huawei, telecom experts, telecom industry executives, academia and media representatives attended the Seminar. The speakers on the occasion shared their expert thoughts on areas of mobile technologies, broadband, consumer lifestyles, smart phones, mobile content, services and applications. They also emphasized on improved quality of telecom systems and

services in future, and focus on telecommunication not only as an element of support but also as a driving force of economic growth.

In-house Research at PTA

With a view to make prudent regulations in line with new technological trends and changing dynamics of telecom markets, PTA sets annual targets and goals for its departments. This practice has helped the Authority in making effective regulations and invoke best practices in the telecom sector of Pakistan. During FY2012, PTA officers carried out several studies on the topics of regulatory reforms, market transformation, telecom financials, traffic trends, telecom impact on the economy, broadband penetration, cyber filtering and quality of service.

Merger of 14 LL and One LDI License

As part of PTA's initiatives on licensing reforms for development of a more conducive telecom regime in Pakistan, this study explores the implications of merging 14 Local Loop and 1 Long Distance International License to form a consolidated license. With the availability of non-geographical (IP oriented) access solutions, the restriction of services within the local loop regions is neither a technological trend nor could easily be enforced. The scope and ease of LL operators getting involved into the LDI business has increased. Keeping in view the global impact of Value Added Services (VAS) on operator's ARPU, the study explores the possibility of including the existing CVAS under the umbrella of proposed consolidated license. The stand alone existing regime of CVAS will remain intact. In order to introduce a unified licensing regime through a new policy, the study provides the requisite inputs to Ministry of IT & Telecom. The study also suggests a list of telecom services to be under the proposed consolidated license.

Inter-cellular Network Utilization for SMS Traffic

This study provides an in-depth analysis of the SMS traffic for year 2010 of all the cellular mobile operators in Pakistan. It includes the total SMS traffic being generated in Pakistan, monthly usage trend, inter-operator and intra-operator traffic volume. During the year 2010, the total SMS generated in Pakistan were 175.4 billion, a 15.7% growth from the year 2009. Nationwide, Ufone has generated the maximum number of SMSs per month, although the subscriber base of Ufone is less than Mobilink and Telenor. Ufone also has the highest international SMS exchange count as compared to all other operators. The report recommends that operators in Pakistan should introduce mechanism for a feature of delivery reports and other delivery assurance. The report also recommends that Application-to-Person (A2P) & Person-to-Application (P2A) SMS must flourish in order to increase the revenues from SMS. A2P & P2A SMS must be counted and maintained separately from Person-to-Person (P2P) SMSs. International SMS traffic must be enhanced through attractive packages.

Regulatory Reforms Impact on Economy

This study assesses the impact of telecom services reforms and development on Pakistan's economy with empirical

support. In particular, the contribution of telecom services on the growth of overall economy and major sectors has been analysed with the support of econometric estimates. The econometric estimates show that the telecom developments are significantly and positively impacting the economic growth in Pakistan. The most important finding of the econometric exercise is that telecom is contributing relatively less in agriculture compared to high contributions of telecom in the growth of manufacturing and services sectors. In order to increase the contribution of telecom infrastructure and services in the overall economic growth, the study suggests productive use of telecom services in the society and recommends for the introduction of telecom solutions, e-commerce and mobile applications in the agriculture production processes.

Broadband Penetration in Pakistan - Reasons behind slow growth

An analysis was carried out to highlight major issues behind slow growth of broadband in Pakistan and recommend-ations to resolve them. The study analysed the slow growth in broadband penetration in the light of regional experiences, supply and demand side factors and policy issues, besides consultations with the industry. The study recommends for a holistic whole-of-the-government approach to uplift the growth of broadband penetration in Pakistan on the patterns of policies adopted by South Korea. It also recommends for the reduction in cost of Customers Premises Equipment through subsidies and facilitation in local manufacturing, lower bandwidth prices, and encourages the use of USF for broadband services in rural and unserved areas. Demand side can be improved through government services through internet and subsidies for broadband facilities in educational institutes.

Quality of Service (QoS) of International Roaming

To have a uniform and user friendly international roaming (IR) billing and improved IR QoS, a survey was conducted of GSM IR roaming subscribers of all the five GSM operators in 2011. Following the results of IR survey a Working Group (WG) was formulated to figure out the major issues related to International roaming subscribers. Working Group (WG) consisting of participants from all the five cellular operators gave considerable inputs for improving IR QoS. After taking inputs from the WG members on the results of IR QoS survey, a set of essential KPI's list has been formulated for improvement in IR QoS.

Study on Essential Issues of Cyber Filtering

A study was carried out on effective mechanisms for Internet Content Filtering on national level and best practices of Cyber Content Filtering worldwide. Regulation of Internet Cafes in Pakistan has also been part of the agenda. An Industry Consultation on Cyber Café Regulations from all the ISPs was carried out. PTA in collaboration with various stakeholders, explored and recommended in the report mechanism for national level filtering in Pakistan, technical requirements for such system on mass level, international best practices and industry response to light-touch regulations for cyber cafes in Pakistan.

LDI Infrastructure and Capacities

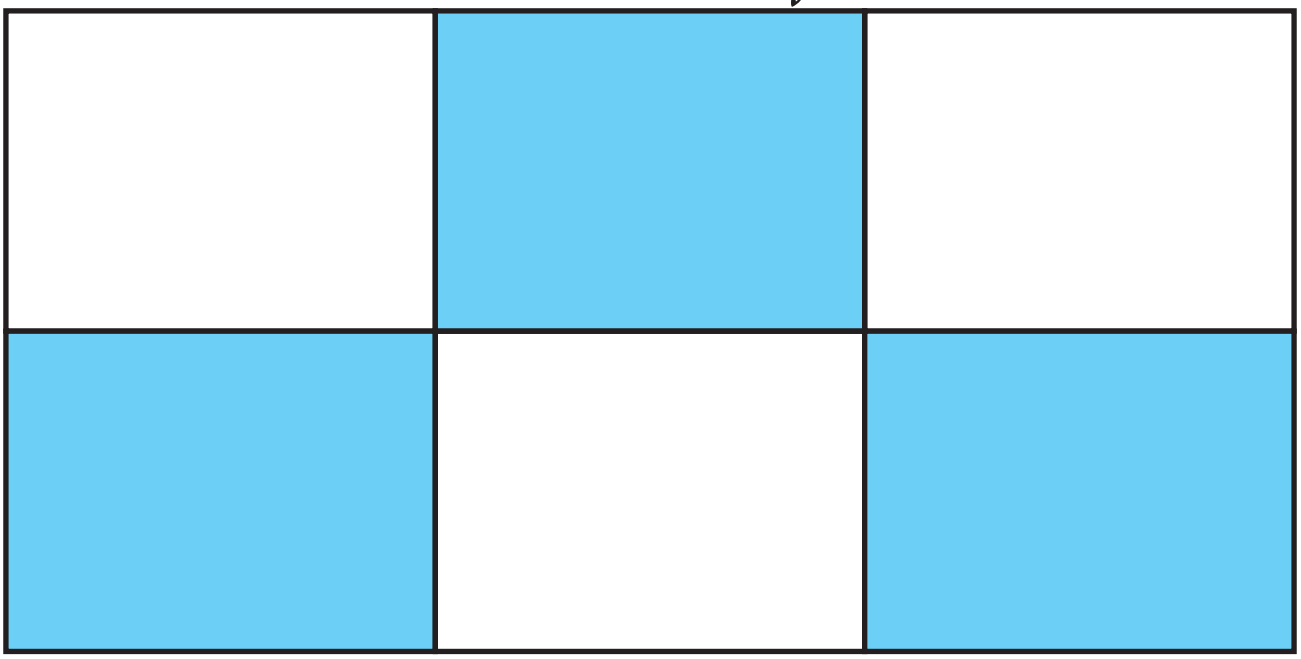
The capabilities of the LDI infrastructure have been studied in detail for the planning of the next phase of Monitoring and Reconciliation of International Telephone Traffic (M&RITT) system, along with the outcome of the existing M&RITT facility and the cost sharing formula. The data from LDIs has been analysed and studied for the total acquired bandwidth and the utilized bandwidth, separately for IP traffic and SS7 type traffic. Respective share of finances in the installed Monitoring system were then calculated through different charging mechanisms. An estimated cost of newly suggested 10 GE system for monitoring has also been calculated and compared. A model for M&RITT has been developed based on which an STM-16 only monitoring link will be implemented by the landing stations. It has been recommended that the charging mechanism should be based on the interface type of the LDI instead of the bandwidth acquired by them, which is the practice in vogue.

Human Resource Development

Performance of an organization greatly depends on the quality of its human resource and well defined working procedures. PTA management believes in continuous professional development of its employees and management systems that can help the regulator deal with regulatory challenges effectively. With the help of international and domestic collaborations with various institutions (ITU, APT, LIRNEasia, USTTI, SAMENA, GSMA, MOFCOM, SAFIR), PTA provides regular opportunities to its employees for training, networking and sharing of knowledge through participation in seminars, workshops, meetings, conferences and other forums. Due to scarcity of funds for such activities, participation of PTA employees in foreign trainings and conferences has been managed through sponsorships from host institutes and other funding agencies. During FY2012, as many as 20 PTA officers attended foreign trainings/ seminars/meetings on the topics of broadband and internet regulatory policy, 3G services, IPV6, ITU telecom world, mobile quality of service, world radiocommunication, mobile payment and Banking, international mobile roaming regulatory issues, spectrum allocation, public network evaluations, mobile applications, radio station administration and radio equipment certification, and network planning and optimization. PTA officers participated in these events mostly through funding from ITU, APT, USTTI, SAFIR, LIRNEasia and MOFCOM China. During the reported year, PTA also arranged training of its officers through reputed local institutes including LUMS, NUST, IBA and PIM.

Chapter 5

Mobile Banking in Pakistan

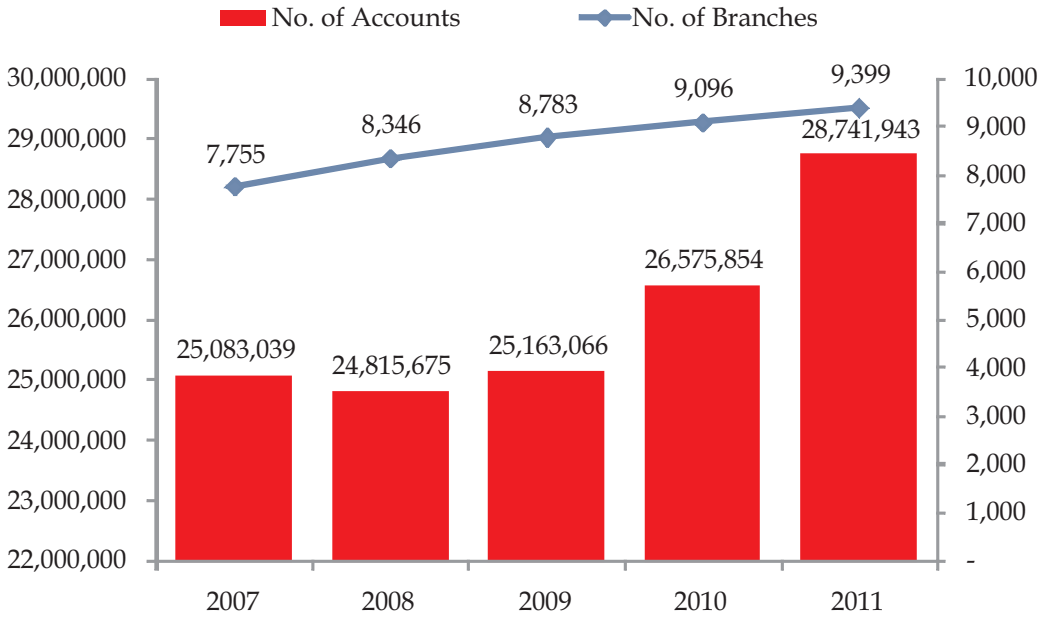


Financial Inclusion

The financial sector of Pakistan has shown slow growth in terms of expansion in bank branches and bank accounts. Currently, there are only 9,399 bank branches in the country with a small addition of 2,433 branches since 2002. Similarly, no substantial growth has been witnessed in the total number of bank accounts (see Figure - 38). Due to this slow growth in the expansion of formal banking network in the country, only 15 percent of Pakistani population is using formal financial services. In comparison, 48 percent of the population in India has access to formal financial system whereas this figure is 32 percent in Bangladesh and 59 percent in Sri Lanka[10]. Lack of financial services infrastructure in the form of formal bank branches and networks has been a significant factor in the limited access to financial services in the country. Consequently, a large segment of population in the rural and remote areas is deprived of access to formal financial services. Due to limited financial infrastructure in Pakistan, modern technologies can be used to increase the penetration of financial services in the country through branchless and mobile banking.

Financial sector is one of those areas where use of mobile services can bring in revolution in Pakistan. Provision of banking services to the financially excluded poor is an unprecedented opportunity when traditional branch-based banking cannot reach to the un-served/poor in rural areas. Introduction of efficient mobile banking services in the country will utilize the strengths of mobile networks to provide financial services to unbanked population as well as increase the overall efficiency of the banking sector in Pakistan.

Figure - 38
Number of Bank Branches and Bank Accounts in Pakistan



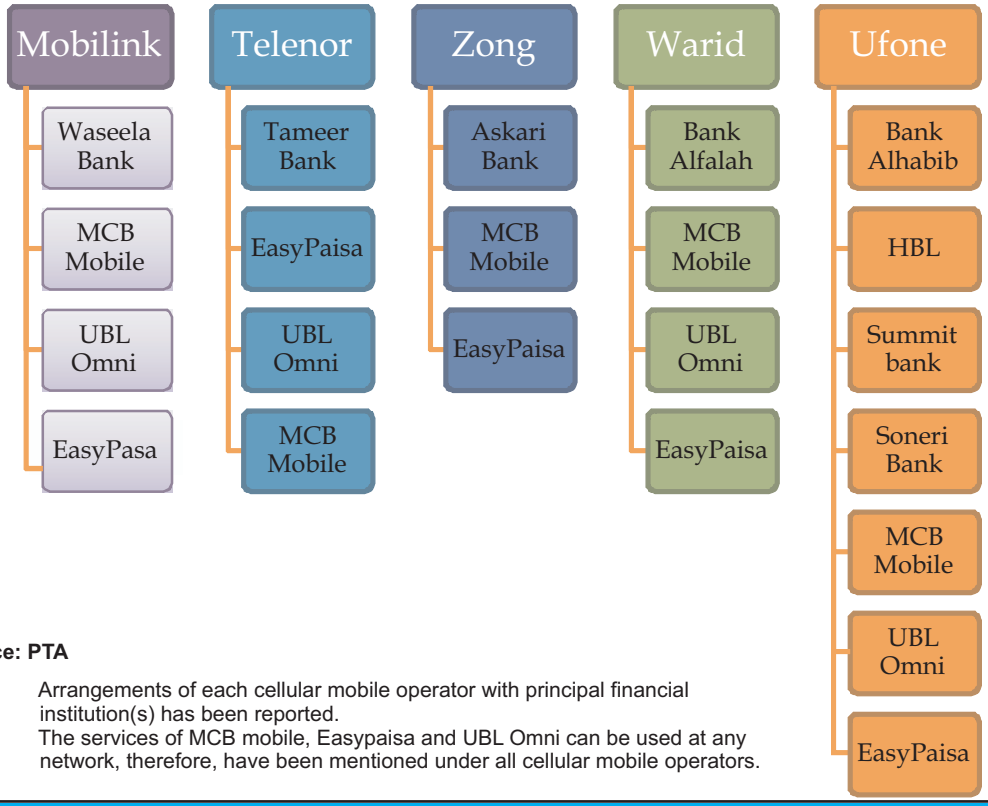
Source: State Bank of Pakistan

[10] "Bringing Finance to Pakistan's Poor", World Bank, 2009.

Mobile Banking Models in Pakistan

Pakistan is one of the fastest developing markets for the mobile financial services in the developing world. The cellular mobile operators, banks and technical service providers are aggressively working on a variety of business models of mobile financial services in the country. In all the models so far introduced in Pakistan, the mobile banking accounts are maintained in the authorised commercial banks and all the mobile banking transactions are recorded in the banks irrespective of transactions being carried out on behalf of the mobile banking agents or the mobile banking customers. Mobile Banking agents provide basic infrastructure for the provision of m-banking services in Pakistan and more than 96 percent of m-banking transactions are carried out through these agents and there is minimal use of mobile banking services for account to account transfers by individual customers without the involvement of agents. Cellular mobile operators are configuring mobile banking services on basic handsets using various technical platforms/bearer channels including SMS, Unstructured Supplementary Service Data (USSD) and Sim Toolkit (STK). At present, SMS is the most commonly used bearer channel. Mobile banking in Pakistan provides a variety of services including fund transfers from account-to-account (A2A), person-to-person (P2P), account-to-person (A2P), person-to-account (P2A), and bill payments, merchant payments, mobile top-ups, cash-in and cash-out deposits, loan repayments, donations, balance inquiry etc. Cellular mobile operators and

Figure - 39
Operator-wise Mobile Banking Arrangements



Source: PTA

Note: Arrangements of each cellular mobile operator with principal financial institution(s) has been reported.
The services of MCB mobile, Easypaisa and UBL Omni can be used at any network, therefore, have been mentioned under all cellular mobile operators.

banks are continuously innovating to provide new services and to increase the exccess of financial services to a greater number of Pakistanis. A snap shot of arrangements of the operators in the market for the provision of m-banking services is provided in Figure - 39 whereas detail is provided in the ensuing paragraphs.

Telenor

Telenor Pakistan, partnered with Tameer Micro Finance Bank to introduce mobile banking for the first time in Pakistan and launched easypaisa in October 2009. The mobile banking services have been launched by developing a "Virtual Joint Venture Model" which is bank-led in nature. Certain basic financial services are provided in an Over-the-Counter (OTC) format through the distribution network of easypaisa agents. Easypaisa allows customers to make OTC payments and money transfers even if someone is not a customer of Telenor or Tameer bank, thereby, completely eliminating all limitations of being an existing Bank or Telco customer. Telenor also launched Easypaisa mobile account in February 2010 that allows Telenor customers to access their mobile account in Tameer Microfinance Bank through their Telenor SIM and perform a range of mobile banking transactions.

The basic premise of Easypaisa is to reach the un-banked who do not have access to formal financial channel by targeting the bottom of the pyramid. Offered products include bill payments (Utility as well as cell phones), money transfer and merchant assisted services from 18,000 merchants. Easy paisa service can be used by any person in Pakistan (mobile phone not mandatory).

Ufone

Ufone launched its "UPayments", a USSD based Mobile Banking service, in Dec 2010 by making it accessible to all Ufone customers using any handset. Presently there are four commercial banks live on U-Payments services which are HBL, Summit, Soneri and Bank AL-Habib with 6 more banks to be added in due course of time. "Upayments" allows funds transfer facility to other accounts of the same bank and interbank funds transfer (IBFT), sending money to other accounts of 17 partner member banks of 1-LINK. Other offered transactions on "UPayments" include Ufone Prepaid Recharge, Ufone Postpaid Bill Payment, Utility Bill Inquiry, Utility Payment (Direct payment from respective bank account in real time) and Bank Account Balance Inquiry and Mini Statement.[11]

Ufone is also planning to provide full fledged mobile financial services by engaging its agent network for mobile banking operations and acquiring 100 percent share of Rozgar Micro Finance Bank. At present, Ufone is offering Government-to-Person (G2P) payments under Benazir Income Support Program (BISP) project. For the BISP project, Ufone has collaborated with 4 major commercial banks namely HBL, UBL, Summit and Bank Al-Falah to serve around 4 million beneficiaries throughout Pakistan. From Dec 2010 till date Ufone has successfully performed cashout transactions of over PKR 250 million for BISP using around 100 agents spread throughout the country.

[11] http://www.ufone.com/upayments.aspx

Mobillink

Mobilink has obtained a country wide license of "Waseela Microfinance Bank" through which the company is set to launch its mobile banking services in Pakistan. Waseela Bank has opened its first branch in Islamabad. On the pattern of Easypaisa of Telenor, Mobilink has planned to offer a variety of mobile banking services through agents network and Waseela mobile accounts.

CMPak

CMPak has partnered with Askari Bank Limited to start mobile banking services. The soft launch of their joint venture was taken off in May 2012. The pilot launch is now offering conventional banking services currently offering salary disbursement for large-scale organisations and account to account transfer through mobile channel. The service is powered by Inov8, which is one of the pioneer technology companies in Pakistan to provide mobile banking service in the country.

Warid

Warid is currently providing only basic services of post-paid bill payments and top-ups for its pre-paid subscribers through any 1-LINK ATM machines. Warid is expected to partner with Bank Alfallah to launch m-banking services.

Omni

"Omni", the second biggest mobile banking model in Pakistan, was introduced by United Bank Limited in April 2010. Omni is a direct agent based mobile banking model, which allows "Omni" customers to make OTC bill payments and money transfer facility (P2P and A2P) through its agents known as 'Dukkan'. The network of Omni Dukaans is spread in over 600 cities and towns across Pakistan. A cellular mobile subscriber can open an Omni account at any Omni Dukaan by providing CNIC and cellular mobile number, irrespective of which service he/she uses. People without Omni account can also use Omni Dukaan to pay bills, send or receive payments.[12] Through Omni, UBL has been disbursing payments for non-government organisations and government programs such as BISP and flood relief programs.

MCB Mobile

MCB Bank Limited has launched its m-banking services with the name of "MCB Mobile, which allows its account holders to view their bank account balances and request mini-statements using mobile phones, payments of utility bills, top ups for all pre paid mobile connections, payment of post paid mobile bills, transfer of funds from their MCB accounts to other MCB accounts and payment of donations. These facilities are available to any MCB account holder that activates MCB mobile irrespective of his/her mobile network operator. MCB is currently running its m-banking without agent network. MCB is planning to extend its m-banking services by launching its m-banking product named "MCB Lite" for fully functional transactional banking through m-wallets outside MCB branches.

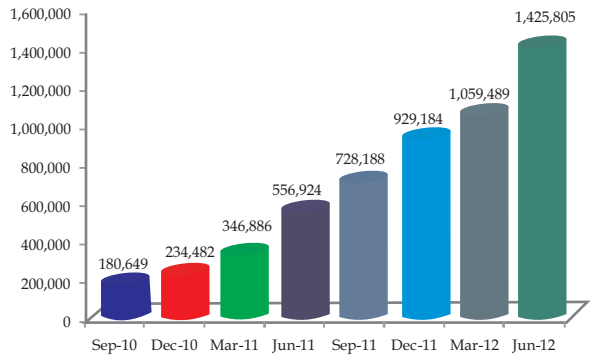
Mobile Banking Market in Pakistan[13]

Currently m-banking market in Pakistan has two major players Telenor with

[12] https://www.ubldirect.com/Corporate/BankingServices/Omni/home.aspx
[13] Data source in this section is State Bank of Pakistan unless stated otherwise.

'Easypaisa' launched in October 2009 and United Bank Limited (UBL) with 'Omni' initiated in April 2010. These two major m-banking initiatives have significant contribution in the growth of mobile banking in Pakistan. During the last two years there has been a massive growth in terms of basic indicators of m-banking indicators including m-banking agents, m-wallet accounts, number of transactions undertaken per day and the outreach to low-income subscribers.

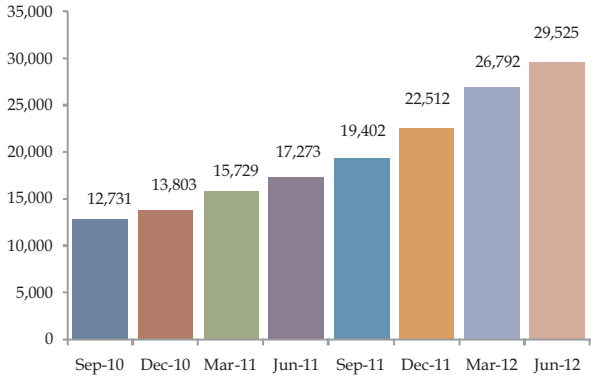
Figure - 40
Total Number of M-banking Accounts



Source: State Bank of Pakistan

The number of mobile bank accounts (m-wallets) in Pakistan has reached 1.4 million at the end of June 2012, showing a growth of 156% during FY2012. The current number of m-banking accounts is 7 times higher than the numbers at the end of September 2010. Out of 1.4 million m-banking accounts, 66% are active accounts. The ratio of active accounts has increased from 54% as of end December 2011. This increase in the active accounts is mainly due to increase in the small transaction m-banking accounts by UBL Omni, facilitated by regulatory flexibility in account opening by SBP. Telenor is also expected to avail this regulatory flexibility and would attract small denomination accounts, which will further increase the m-baking accounts in the country.[14] Keeping in view the cellular mobile subscription of over 120 million, the figure of 1.4 million m-banking accounts is a very small number, and shows the potential of m-banking in Pakistan even if we were to reach 50% of all cellular subscribers.

Figure - 41
Total Number of M-banking Agents



Source: State Bank of Pakistan

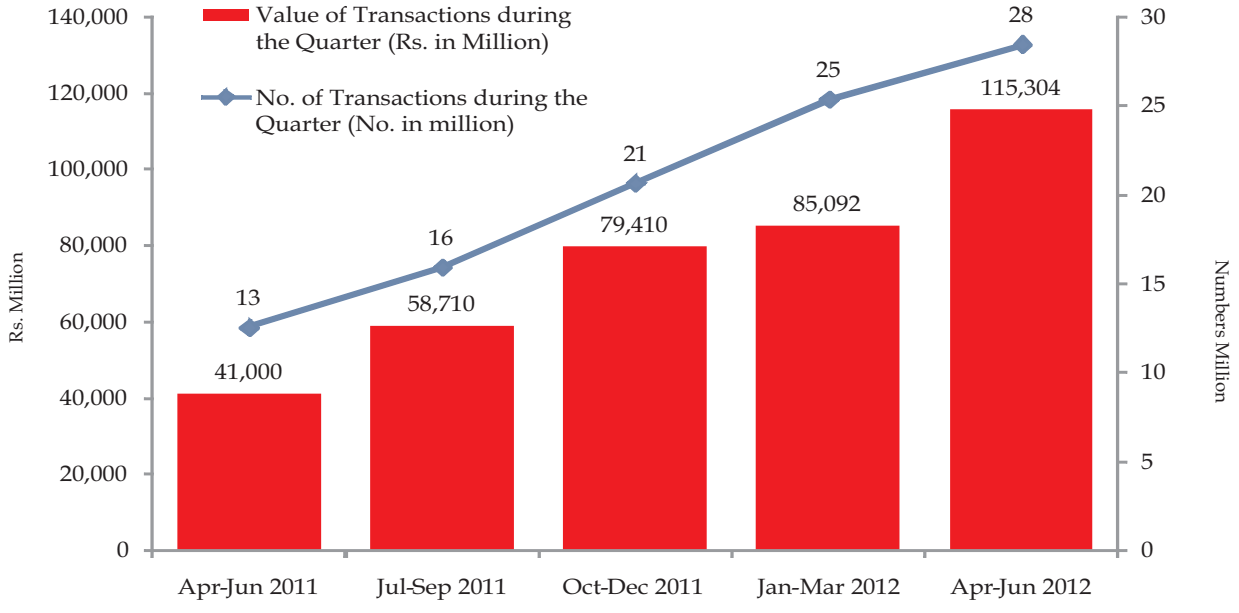
The network of m-banking agents provides necessary contact point for m-banking account opening and transactions, and therefore, has vital importance in the current form of m-banking models in Pakistan. More than 95% of transactions are carried out through agents whereas account to account transfers by individual customers are still limited. Currently, there are more than 29,254 m-banking registered agents, which are almost three times the total number of bank branches (9,399) in Pakistan. This shows the potential of m-banking in Pakistan to reach to the unserved. These agents are spread across the country, however, are mostly concentrated in the urban areas and there is need for incentives and awareness campaign to take agents

[14] Branchless Banking Newsletter, Issue No. 4, State Bank of Pakistan.

network to the far-flung and rural areas of the country. Major concentration of m-banking agents is in the province of Punjab. As of end March 2012, 62% of agents were in Punjab. According to Telenor Group, retail agents of Easpaisa have crossed 18,000 and are spread over 750 cities across Pakistan.

Activity in the m-banking market can be analysed with the number of transactions undertaken and the value of these transactions. Total number of transactions processed during FY2012 are 90 million with a value of these transactions amounting to Rs. 339 billion. Quarter-wise number and value of transactions have increased continuously during FY2012, showing average quarterly growth of 23% in the number of transactions and 30% growth in the value. The growth in the number of transactions is greater than the value, therefore, the average size of a transaction has increased from Rs. 3,280 during Apr-Jun 2011 to Rs. 4,060 in Apr-Jun 2012, showing a growth of 23.8%. Average number of transactions has also increased from Rs. 138.889 during Apr-Jun 2011 to Rs. 315, 178 during Apr-Jun 2012. Therefore, overall activity in the m-banking market has substantially increased during FY2012. However, account-to-account transfer of funds is only 3.3% of the total fund transfers carried out during FY2012, which shows that interbank transactions by individual m-banking users is at a minimal level. On the other hand person-to-person transfer of funds is 85% and is carried out through the agents network. This shows that majority of people who are using m-banking services do not have their m-banking accounts and use only the agents network for fund transfer. Mobile banking regulations envisage bringing in these users formally into the network of m-banking system and encouraging the use of interbank transactions and purchases through m-wallet.

Figure - 42
M-banking Transactions



Source: State Bank of Pakistan

PTA Efforts for Conducive Regulatory Framework

Pakistan Telecommunication Authority and State Bank of Pakistan (SBP) have been working to provide conducive regulatory environment for the promotion of mobile services in the country and to bring maximum number of people in the network of financial services. PTA has done a great deal of work to finalize the mobile banking regulations under which level playing field has been proposed to all the cellular mobile operators, banks and technical service providers with a vision to take financial services to every mobile subscribers in the country and to encourage maximum interbank transactions. PTA and SBP are working for low cost m-banking facilities in the country and discourage anti-competitive practices including cartels and collusive behaviour in the larger interest of a growing m-banking industry in the country.

PTA-SBP collaboration

PTA is collaborating with the SBP and all other stakeholders to provide necessary framework of mobile financial services in Pakistan. Joint Regulatory Committees of SBP and PTA held several meetings during FY2012 to draft m-banking regulations and move forward.

In order to provide enabling regulatory environment and develop cooperation for having a simplified mobile banking framework that can allow license holders to take on branchless banking activity and to harness full potential of such services, PTA and SBP signed a Memorandum of Understanding (MoU) on 11th January, 2012. The MoU was signed at a local hotel in Karachi after a meeting of all stakeholders to highlight the objectives and potential benefits of mobile banking in Pakistan. SBP has been proactive and supportive to introduce innovations in Pakistan's financial sector with the collaboration of PTA and telecom operators. With this MoU, both the

institutions have shown their interest and commitment in stimulating mobile banking services in the country. SBP and PTA act as facilitators for telecom operators, banks and third party service providers for mobile banking in Pakistan. PTA and SBP have developed close cooperation for their working on the m-banking regulations and related issues of increasing financial inclusion in the country.

Consultation Process

For implementation of Policy Directive by the MoIT for m-banking in Pakistan, PTA drafted Third Party Service Providers (Branchless Banking) Regulations 2011 in consultation with the stakeholders including MoIT, SBP and CMOs. In order to deliberate on the draft m-banking regulations, PTA initiated a consultative process with all the stakeholders. To this end, PTA circulated the draft regulations among all the stakeholders for their comments. In order to discuss the comments and observations of the stakeholders, PTA also arranged a consultative meeting with the CMOs in January 2012. SBP also arranged a meeting with major FIs along with PTA committee members at Karachi, where concerns of FIs were also discussed.

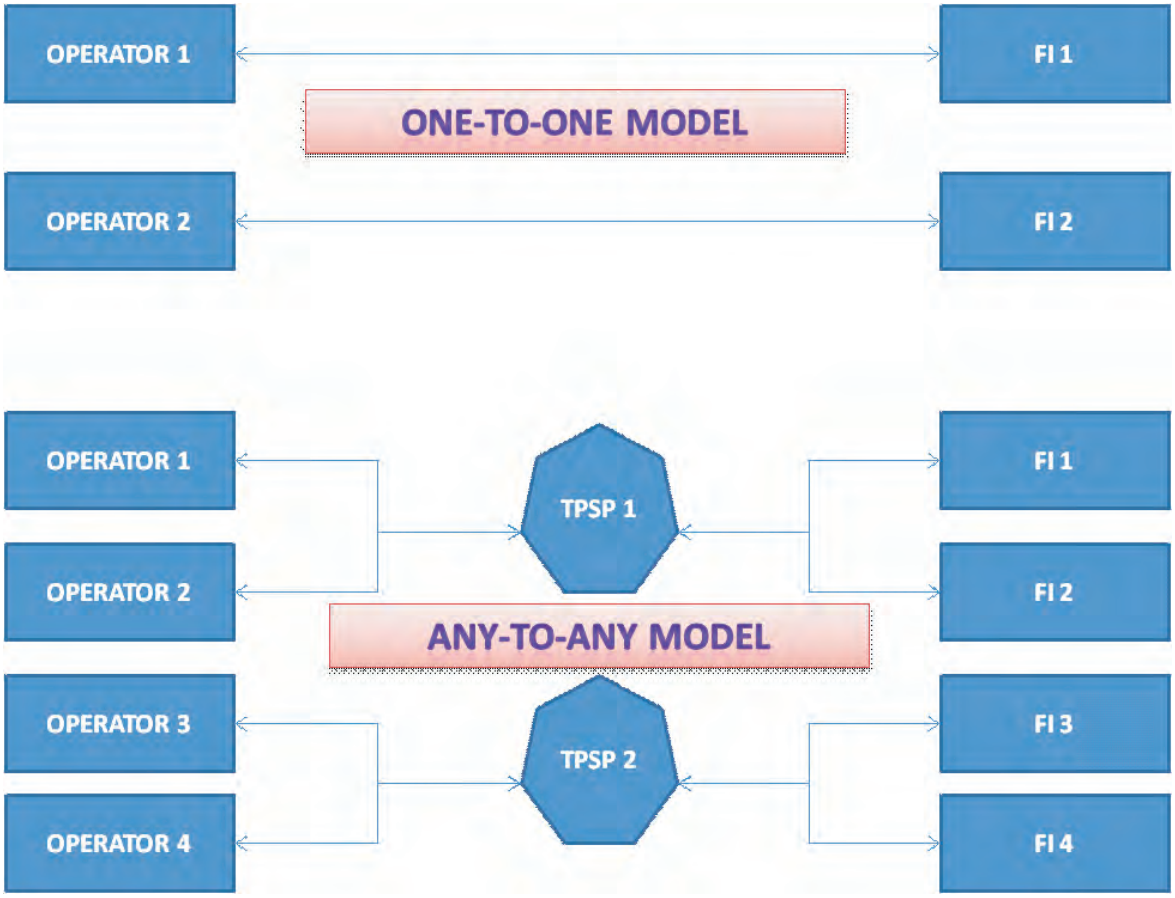
SBP-PTA regulatory committee that was formed for working on mobile banking regulations has done a great deal of work, in particular, since the signing of the MoU between PTA and SBP in January 2012. PTA committee arranged several rounds of meetings with the SBP, and has made substantial revisions in the draft regulations to address the concerns of the stakeholders. The committee finalized the draft regulations after discussion with SBP and all major concerns of the stakeholders have been incorporated in the final draft of the regulations called "Regulations for Technical Implementation of Mobile Banking, 2012".

Regulations for Technical Implementation of Mobile Banking, 2012

The technical framework of mobile banking in PTA's draft Mobile Banking Regulations 2012 provides a platform for all the operators and all the banks to interconnect and provide banking services to all mobile users. The draft regulations have been prepared in line with the MoIT Policy Directive for m-banking in the country and SBP's Regulations on mobile and branchless banking. The framework provides a detailed mechanism for technical implementation of one-to-one and any-to-any models of mobile banking, which are bank-led models in nature (Figure - 43). For "any to any" case involving multiple financial institutions and multiple cellular mobile operators, the draft Regulations considers that there will be a Third Party Service Provider (TPSP) for settling such transactions, which will have a regulatory oversight of PTA. The draft Regulations cover the obligations of the operators, TPSPs and financial institutions offering mobile banking and provide a framework for the mutual agreements, network conditioning and dispute settlement between/among the parties engaged in mobile financial services.

SBP is also in the process to prepare regulations for interoperability of m-banking that are in line with PTA's regulations of m-banking and shall be

Figure - 43
Proposed Mobile Banking Model



applied on TPSPs and AFIs. PTA and SBP will issue the respective m-banking regulations in due course. The regulatory framework provided in these regulations will be beneficial for all including telecom operators, financial institutions and consumers. Some of the benefits include network effect, operators synergy, avoidance of duplication cost, bank the un-served and reducing cost of provision of banking services.

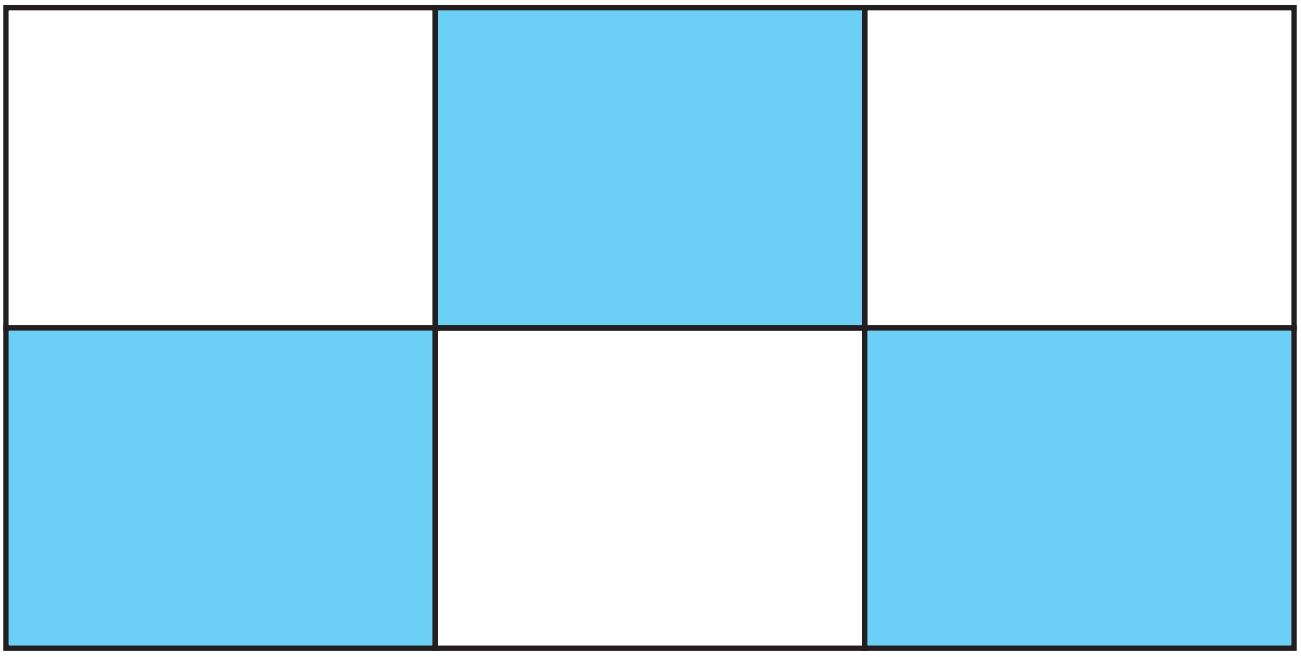
Future Outlook

Mobile banking industry of Pakistan has vast potential for growth in the coming years keeping in view the innovation by the mobile operators and banks, and proactive role of the regulators to facilitate this process. The issuance of m-banking regulations by PTA and SBP along with the existing SBP regulations on branchless banking will provide an enabling environment to exploit the m-banking potential in Pakistan and to increase the financial inclusion in the country. New players in the m-banking market will expand the existing base of m-banking network. Competition in the market with new players and TPSP will reduce the cost of m-banking transaction. The m-banking market in the country will take some time to be transformed from agent based m-

banking to formal m-banking system where individual customers use their m-banking accounts for potential inter-bank transactions and purchases. With the maturity in the m-banking market new products will be introduced including mobile savings, insurance, foreign remittance etc. M-banking network, which is currently concentrated in the urban areas shall have to reach to the rural areas, for the financial inclusion of the unserved in rural and remote areas of the country.

Chapter 6

Consumer Protection



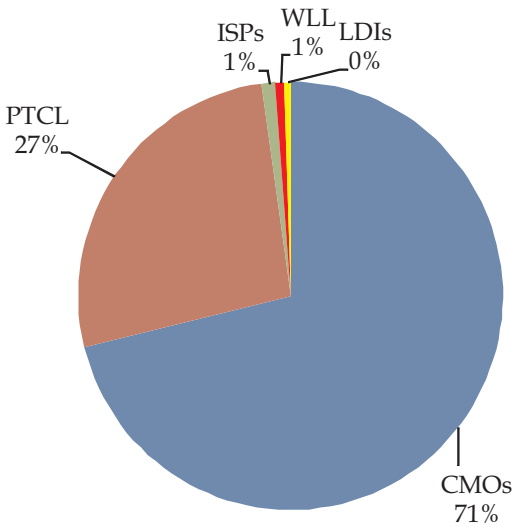
Consumer Protection & Complaints Handling

The unprecedented success of the telecom sector of Pakistan has been an example of regulatory triumph in the regional and international perspective. However, this success also adds additional responsibility upon PTA to ensure that consumer interest and quality of service is not compromised. The Authority remained vigilant on taking measures for protection of consumers through out the last fiscal year, working on Regulations, dealing with industry issues, resolving consumer complaints and complying with Government directions. PTA has been making utmost efforts to provide a reliable platform to consumers for quick and efficient resolution of their complaints via establishment of a dedicated Consumer Protection Department at Headquarters and Zonal Offices at all provincial capitals. PTA has been updating existing consumer related Regulations and devising new ones according to the changing dynamics of the telecom market. Moreover, PTA received thousands of complaints during the FY2012 and 99% of them were redressed, most within the target timeline, which is a significant achievement for the Authority. Following is an overview of the major activities/initiatives of the Authority during FY2011 in the area of consumer protection and complaints handling:-

Analysis of Consumer Complaints

PTA has established an easy and reliable complaint management system at its headquarters so that consumers can lodge complaints via phone, fax, email, website and personal visits. When received, the complaint is immediately taken up with the concerned operator and the complainant is kept in loop throughout till the effective resolution of the problem. Each year, the Authority receives thousands of complaints against cellular, fixed line, wireless, broadband, LDIs and other licensed operators. On the basis of these complaints, the Authority regularly updates its regulatory framework and explores areas of improvement.

Figure - 44
Summary of Consumer Complaints FY2012

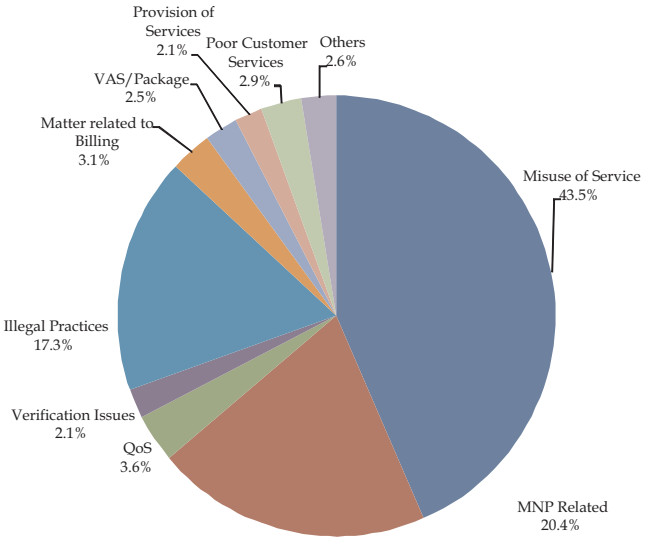


During the reported period, the Authority received 33,310 consumer complaints against mobile operators, PTCL, LDIs, WLL, ISPs and MNP. Figure - 44 shows percentage of total complaints during FY2012 against each service. Since mobile subscribers make up most of the total telecom subscriber base (120 million), 71% of the received complaints pertain to the CMOs. PTCL constitutes 27% of the total complaints while its total subscriber base is about 3.7 million.

A deeper analysis of the cellular

complaints reveal that out of the 23,694 complaints received against mobile services and Mobile Number Portability (MNP), 43.5% were related to misuse of mobile services followed by MNP (20.4%). Although the uptake of cellular mobile services has profound benefits for the country, the low literacy rate and some mischievous elements trouble the customers with wrong calls, obnoxious and unwanted communication. Therefore, this category has the highest rate (43.5%) of complaints in the cellular sector. Illegal practices constitute 17.3% of the complaints while billing, QoS, VAS, poor customer issues were about illegal practices and others form the rest.

Figure - 45
Share of Complaints by Category FY2012



Note: Others includes miscellaneous issues, refund of amount, non provision of services, misleading statements

Looking at the complaints received against each cellular operator, the maximum number (6,352) were against Mobilink since it has the highest subscriber base, followed by Telenor, Ufone, Warid and CMPak with 4881, 4692, 3216 and 2491 complaints, respectively. The number of complaints against cellular operators is far less than the subscriber base of the companies which is a good sign for the sector. According to the share of each operator in total complaints received by the Authority, Mobilink had the highest (29%)

Figure - 46
Complaints Received and Resolved (Mobile Operators) FY2012

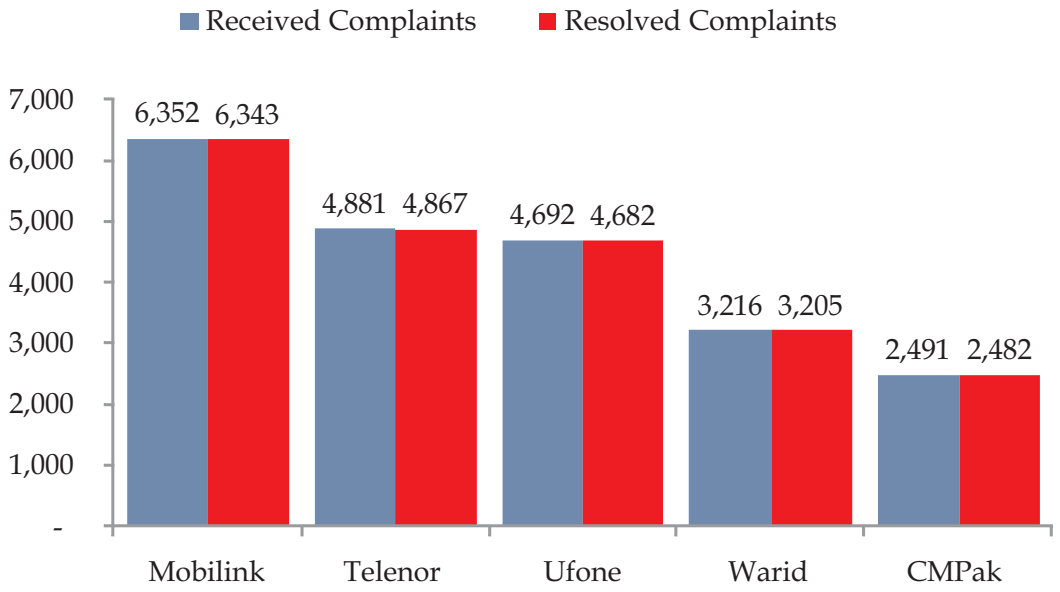
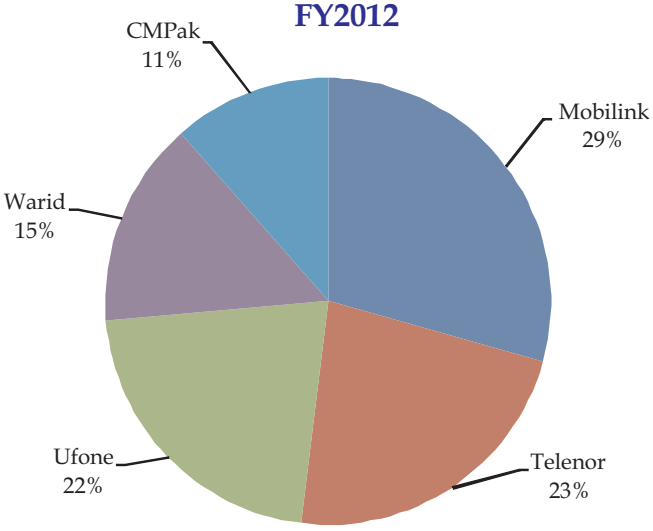


Figure - 47
Mobile Operators Complaints Share FY2012



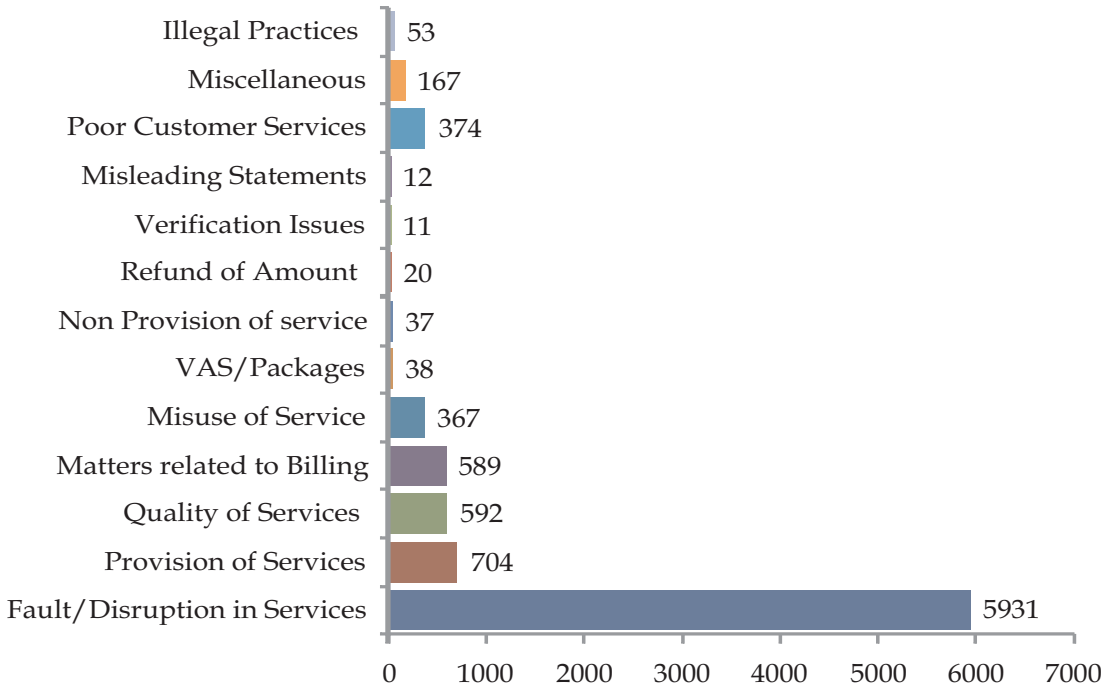
followed by Telenor 23%. Ufone had 22% share while Warid had 15% share in the total complaints followed by 11% against CMPak. PTA successfully redressed 99% of total received complaints against mobile operators.

PTCL is the virtual monopoly holder in fixed line sector, therefore, the nature and number of complaints against the company depicts the overall state of the local loop sector in Pakistan. The Authority received 8,895 complaints against PTCL in various categories. However, faults/disruption in service constitutes the major chunk of the complaints. The infrastructure of the incumbent needs immediate attention to curb this major portion of complaints. Provision of service, QoS, billing issues and other complaints make up the rest of the complaints.

IMEI Blocking

The International Mobile Equipment Identity or IMEI is a number, usually unique, to identify GSM, WCDMA, and iDEN mobile phones, as well as some satellite phones. It can be checked on the phone by entering *#06# into the keypad

Figure - 48
Analysis of Consumer Complaints (PTCL) FY2012

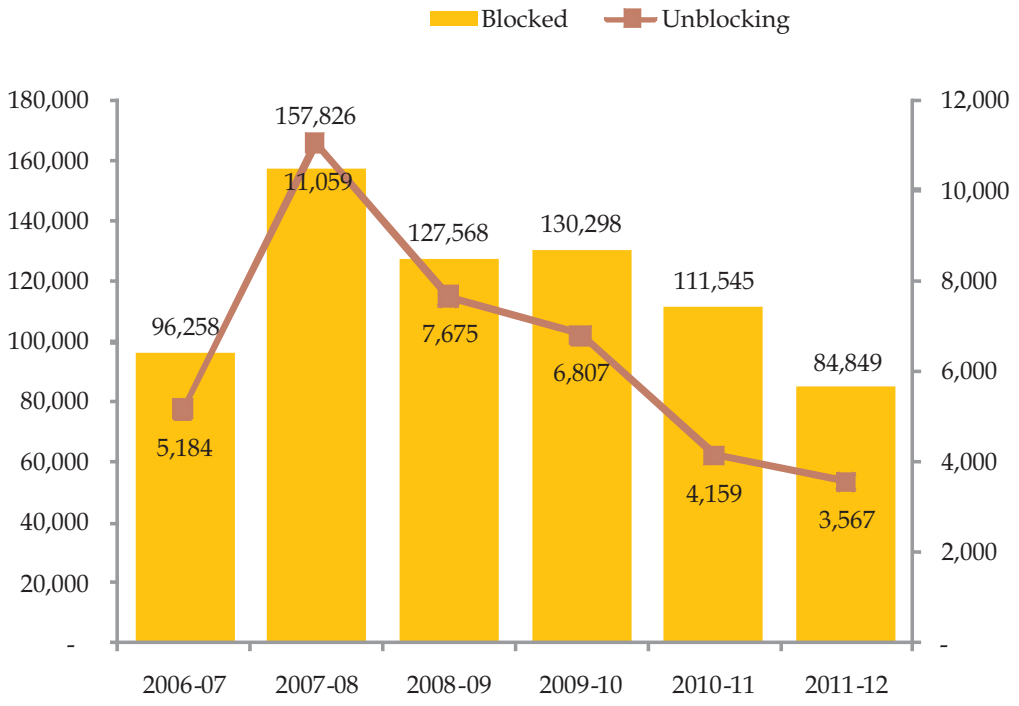


on most phones. In 2006, PTA realized that the exponential growth in mobile uptake has also increased the number of stolen, snatched or lost mobile handsets, therefore, IMEI blocking facility was introduced thereby enabling the consumer to get the handset blocked on all mobile networks in Pakistan. However, if the blocked handset is found by the consumer, he/she can also get it unblocked after following the SOPs. Since the commencement of this facility, 708,344 IMEIs have been blocked. Out of these, 38,451 handsets have been unblocked after owner produced genuine claims about the handset as per procedure.

Conclusion

PTA exerts its utmost efforts to ensure that high quality standards are met and consumer complaints are redressed efficiently and effectively. Over the years, PTA has revamped its complaint management system where multiple facilities such as helpline, fax, email, online form, in-person visits etc are available for the consumers to launch their complaint against any operator/ service in Pakistan. The dedicated department of Consumer Protection at PTA headquarters receives and resolves complaints and notifies the complainant about case proceedings till the satisfaction of complainant. Regular analysis of the complaints is carried out and companies are directed to improve the deficiencies through meetings and Standard Operating Procedures. In order to equip itself with the regulatory cover, PTA issued various Regulations such as Telecom Consumer Protection (Amendment) Regulations, 2011, Protection from SPAM, Unsolicited fraudulent

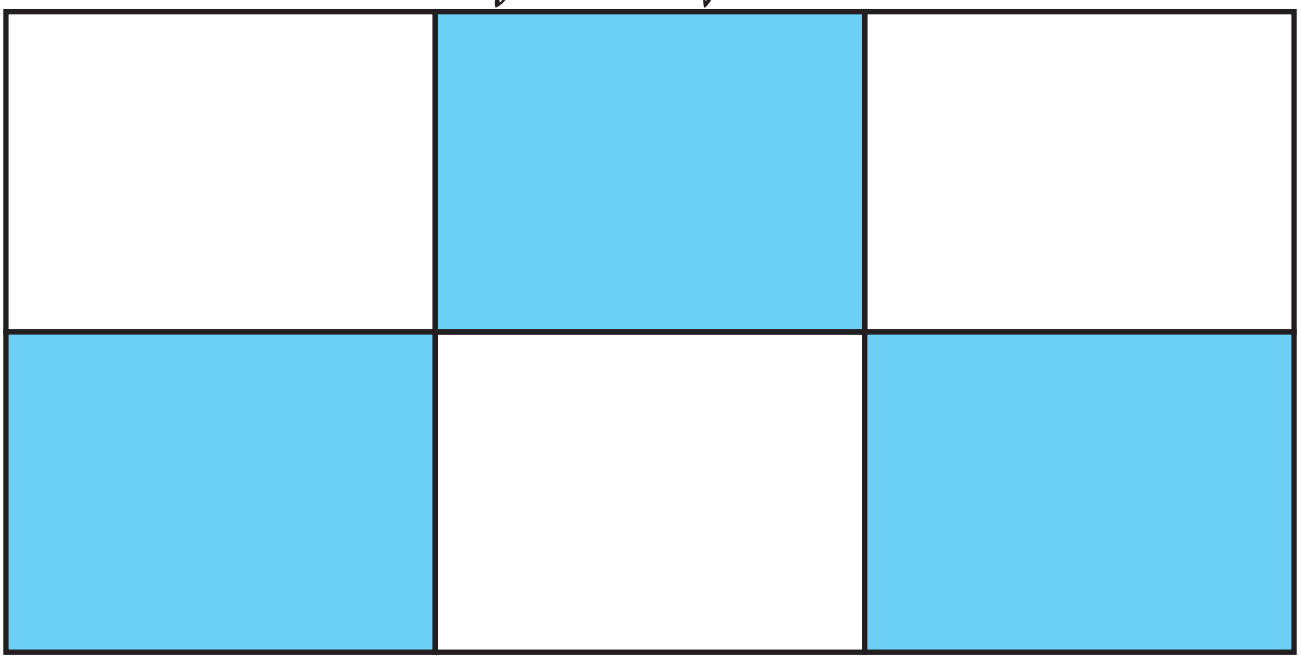
Figure - 49
IMEI Blocking and Unblocking



and obnoxious communication Regulations 2009, Protection from Health Related Effects of Radio Base Station Antenna Regulations 2008 from time to time. Moreover, to address the security concerns of the Government, PTA launched various mega projects such as Subscriber Antecedents Verification System 789, 667, 668 and computerized CSAF. In parallel to improving regulatory provisions, PTA also conducts public forums in major cities to keep the general public aware of their rights and obligations. PTA believes that empowering consumers and educating them about the telecom sector is the best way to deal with emerging paradigms of the market.

Chapter 7

PTA Agenda for the Year 2013



PTA intends to bring in new age information society in telecom sector in the year 2013, as it strives to launch 3G technologies for the people of Pakistan, strengthen the regulatory framework and devise comprehensive consumer protection mechanism and to set up further measures to enhance the security of people of Pakistan through telecom. Following are some of the priorities on PTA's agenda for the year 2013:-

Auction of 3G Licenses

The foremost priority of PTA for the year 2013 is to bring 3rd Generation mobile services to the people of Pakistan through an open, fair and transparent auction of licenses. The introduction of 3G services is expected to bring advanced mobile data services for the telecom consumers as well as to provide an opportunity for foreign investment and fetch significant amount of foreign exchange into the country. PTA as the custodian of the auction process has already done most of the ground work including preparation of Information Memorandum, which provides auction methodology and other information. PTA will involve all the stakeholders to make the auction open and transparent. PTA will launch the media awareness campaign to provide necessary information to the investors about Pakistan's economic and cellular market potential.

LDI Licensing

Long Distance and International services have long served Pakistan's telecommunication sector as the connecting link to the outside world. De-regulation of the telecom sector brought new players in the market and currently 13 operators constitute the LDI sector of Pakistan. However, LDI sector is still under the firm grip of the incumbent, both in terms of revenue and traffic. In 2007, Government of Pakistan imposed watch hold on further licensing in the LDI/LL sector till March, 2013. As that watch hold period is about to expire, it is expected that new players will be gearing up to acquire LDI licenses since a lot of potential still exists in this importance sector of Pakistan's telecommunication industry. The expected introduction of new players in 2013 will play a vital role in the rationalization of traffic volumes, re-composition of the market structure and curbing the illegal telephony in the LDI sector.

Broadband Proliferation

Broadband sector of Pakistan is an exemplary model of a successful regulatory regime. The broadband market constitutes of latest fixed and wireless technologies and growing subscriber base due to PTA's open and technology-neutral licensing framework. Growth rates of broadband sector for the past few years have been phenomenal; however, there still exists a lot of room for improvement in this sector especially in terms of penetration and coverage area. PTA realizes the true potential of broadband services and vows to bring it at par with the other successful segments of the telecom sector. In the near future, 3G licensing will add another dimension to the broadband sector of Pakistan as broadband speeds will also be available on the cellular networks. 3G cellular operators would also attempt to utilize the

potential of broadband sector by providing broadband on cellular networks and possibly through end user devices such as USBs, 3G Tabs etc. Therefore, the new market dynamics would force all the existing and new operators to be more quality and customer oriented thereby benefitting the customers in terms of tariffs, quality and support services. PTA will also conduct broadband quality of service survey in 2013 to reassess the performance of various broadband operators throughout the country. Government of Pakistan has also vowed to invest billions of rupees into the broadband sector through USF and other initiatives which would further assist the sector in terms of coverage and connectivity. This huge amount of spending will cover projects such as providing connectivity to rural areas, setting up educational and community broadband centres, Fiber optic connectivity to un-served and underserved areas and some special projects as well.

Streamlining Regulatory Framework

PTA intends to further strengthen the regulatory framework by re-visiting the existing regime and bringing in effective Regulatory reforms in accordance with the changing paradigms of the telecom industry of Pakistan and keeping in view the best practices around the world. Regulatory provisions such as Rules, Regulations, licensing, SOPs and Authority directives would be re-shaped to equip the Authority with necessary tools to better manage the telecom sector of Pakistan without influencing the natural market dynamics.

Consumer rights will be further strengthened by the upcoming amendments in the Consumer Protection Regulations while measures to control SPAM, Obnoxious and Fraudulent communication will be also reinforced. In view of the emerging market dynamics of the telecom industry as well as Provisions of The Telecom (Re-Organization) Act, 1996, PTA is in the process of finalizing Telecommunication Retail Tariff Regulations which would be applicable on retail tariffs of all PTA licensees. These Regulations will help PTA in providing a level playing field to all operators and ensuring non-exploitation of consumer rights in the country.

In order to fulfil its Regulatory objectives and facilitate proliferation of telecom services in the country, strengthening the PTA is among the top priorities on PTA's agenda for the year 2013. This involves re-structuring the internal constituents of the organization in line with the best international practices to improve efficiency and effectiveness of the organization. Maximization of the employee potential and rapid disposal of office matters will be the main aim of PTA for undertaking this activity.

Banking through Mobile

One of the key areas of Authority's focus in the year 2013 would be the use of banking services through mobile platforms. Mobile Banking is expected to augment the traditional banking services by providing an additional platform for the financial inclusion of un-served people of Pakistan. It is anticipated that telecom consumers would be able to carry out financial transactions by minimizing time, cost and

effort. PTA has already done extensive work on formulation of Third Party Service Provider Regulations in consultation with State bank of Pakistan which ensures multilateral connectivity between cellular operators and financial institutions. Similarly, PTA also plans to conduct workshops/seminars to bring the benefits of branchless banking for the general public into limelight. Carrying on the same, PTA will continue to support the existing efforts by telecom operators to provide such services while bringing new technologies and sound regulatory regime to strengthen the financial sector in Pakistan. It is expected that Pakistan's economy will be directly benefitted as the unbanked community gets documented through use of mobile accounts and overall transactions through official channels.

Security Measures through Mobile Services

The unprecedented success of cellular mobile services has also been exploited by some mischievous elements in the society who use mobile platform to carry out criminal and unlawful activities in the country. PTA has put in extensive efforts to assist the law enforcement agencies by streamlining the SIM sales procedures and cleaning the existing database of mobile connections with the help of NADRA.

The next big step in this regard would be taken in the year 2013 with the introduction of biometric verification (i.e. matching of thumb impression) in the SIM sales procedure at the sale points. PTA, in consultation with Cellular Mobile Operators (CMOs) and NADRA, is in the process of devising an innovative system of SIM sale wherein a customer's identity would be ensured via biometric scanning of thumb impression at the sales point and his/her ID data will be verified online by NADRA at the spot. Only after the satisfactory verification of the customer's antecedents, the SIM will be issued thereby eliminating any chance of illegal sale of cellular connections.

Another area of focus in direct relevance to the security through mobile phones is the resolution of issue of Mobile Handsets with non-standard IMEIs. Consultations in this regard have revealed that successful resolution of the issue not only requires an active role by multiple stake-holders but also involves a multipronged approach. Key milestones are issuance of policy directives by relevant Ministries (i.e. Ministry of Information Technology, Ministry of Finance and Ministry of Interior), up-gradation of Equipment Identity Register (EIR) by CMOs and enactment of laws for declaring reprogramming of IMEIs as a punishable offence. EIR is a database of IMEIs maintained by each cellular operator which is currently being used to block stolen/snatched/lost mobile handsets as per directions of PTA. Upgraded EIRs would not only facilitate to streamline the process of blocking of handsets but would also help in screening out the non-standard IMEI handsets which could be used by the criminals to carry out terrorist activities in the country.

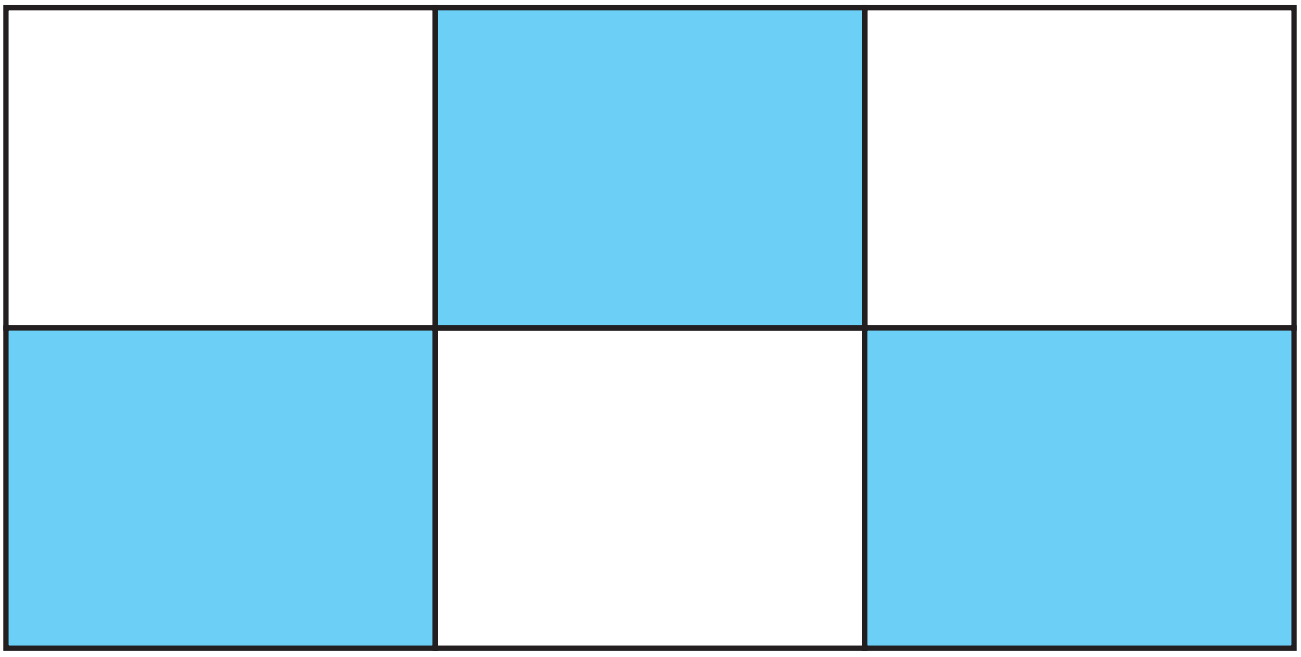
Blasphemous and Adult Content

The openness of the internet and online media has facilitated information dissemination across the world yet it has also faded the ethical and legal boundaries of the society. For the past few years, the heinous act of publishing Blasphemous material on the internet has created major disturbance for the Muslims. Strong protests and condemnation has been expressed by people belonging to all religions and countries including Pakistan. PTA remained vigilant on handling this sensitive issue by proactively blocking any shameful content reported on the internet.

Since 2006, PTA has started blocking of access to any link/website hosting pornographic/adult/offensive material as it is against the religious and social norms of Pakistani culture, on the direction of Inter-Ministerial Committee formed by Prime Minister of Pakistan. So far, PTA has blocked more than 18000 websites links containing anti-state, blasphemous and pornographic contents.

In the year 2013, PTA intends to deploy a comprehensive system of blocking blasphemous/pornographic or offensive websites and links using a centralized URL filtering system. PTA has already established a complaint submission system where such links can be reported for further action by the Authority.

Annexures



PTA Accounts

Annex-1

Pakistan Telecommunication Authority
Balance Sheet
As at June 30, 2012

	Note	June 30, 2012 Rupees	June 30, 2011 Rupees	June 30, 2010 Rupees
Balance with Government of Pakistan				
Federal Consolidated Fund (FCF):		**50,002,598,635**	47,273,234,021	(30,799,594,060)
Payments made in FCF - to date		**(44,801,058,869)**	(43,451,058,869)	41,251,058,869
Balance of FCF	4	**5,201,539,766**	3,822,175,152	10,451,464,809
Balance of Public Account	5	**(8,343,736,811)**	(6,145,406,127)	(6,238,860,678)
Balance of Government of Pakistan		**(3,142,197,045)**	**(2,323,230,975)**	**4,212,604,131**
Long Term Loan		-	-	57,614,450
Total payable to AJK & GB		**1,684,385,386**	1,722,125,961	1,589,407,644
Less: Transferred to current portion - to date				
Amount transferred to current portion		**3,259,760,687**	2,791,010,736	2,419,508,662
Payments made to Governments of AJK & GB - to date		**(2,520,172,745)**	(2,120,693,406)	(2,120,693,406)
Net Amount transferred to current liabilities	9	**739,587,942**	670,317,330	298,815,256
Long term payable to AJK & GB	6	**944,797,444**	1,051,808,631	1,290,592,388
Deferred grant	7	**112,876,455**	146,497,153	180,117,851
Deferred liabilities	8	**242,508,254**	196,721,217	151,453,993
Current liabilities				
Unearned revenue		**2,172,151,250**	2,172,151,250	277,101,250
Payable to AJK and GB - net	9	**267,792,078**	302,902,966	42,639,970
Taxation - net	10	**2,979,035,587**	6,658,618,335	6,100,965,541
Accrued and other liabilities	11	**175,196,979**	54,703,641	49,233,377
		5,594,175,894	9,188,376,192	6,469,940,138
		3,752,161,002	8,260,172,218	12,362,322,951
Contingencies and commitments	12			

	Note	June 30, 2012 Rupees	June 30, 2011 Rupees	June 2010 Rupees
Non-Current Assets				
Property and equipment	13	**496,660,975**	543,676,325	592,674,931
Intangible	14	**792,422**	1,861,457	2,930,492
Revenue related to future periods	15	**42,400,814,482**	53,413,992,174	61,227,548,750
Initial license and spectrum fee receivable in future periods	16	**42,400,814,482**	53,413,992,174	61,227,548,750
		-	-	-
Initial license fees receivable - AJK & GB	17	**800,700,000**	946,550,000	1,155,600,000
Long Tern Investments		-	-	20,000,000
Long term advances to employees	18	**44,544,983**	49,623,906	50,740,188
Current Assets				
Fee receivable	19	**1,210,102,534**	1,089,761,499	7,865,386,560
Investments	20	**392,685,859**	20,000,000	-
Advances, deposits, prepayments and other receivables	21	**647,040,354**	282,137,283	54,158,060
Tax refundable		-	4,700,000,000	-
Cash and bank balances	22	**159,633,875**	626,561,748	2,620,832,720
		2,409,462,622	6,718,460,530	10,540,377,340
		3,752,161,002	8,260,172,218	12,362,322,951

The annexed notes 1 to 31 form an integral part of these financial statements.

Member (Finance)

Chairman

Pakistan Telecommunication Authority

Income and Expenditure Account

For the year ended June 30, 2012

	Note	June 30, 2012 Rupees	June 30, 2011 Rupees
Revenue	*23*	**8,158,113,530**	10,607,876,279
Expenditure			
General and administrative expenses	*24*	**644,636,696**	612,776,507
Provision for doubtful receivable	*25*	**13,995,165**	5,622,759,869
Audit fee		**300,000**	300,000
Financial charges		**10,334**	108,950
		(658,942,195)	(6,235,945,326)
Amortization of deferred grant	*7.2*	**33,620,698**	33,620,698
Operating surplus		**7,532,792,033**	4,405,551,651
Other income	*26*	**554,053,541**	412,296,785
Surplus for the year before taxation		**8,086,845,574**	4,817,848,436
Less: Provision for taxation			
- Current year	*10 & 28*	**(2,835,713,329)**	(3,822,098,329)
- Prior		**(2,051,041,921)**	(5,133,945,733)
		(4,886,755,250)	(8,956,044,062)
Net surplus / (deficit) for the year transferred to Federal Consolidated Fund		**3,200,090,324**	(4,138,195,626)

The annexed notes 1 to 31 form an integral part of these financial statements.

Member (Finance) **Chairman**

Pakistan Telecommunication Authority

Cash Flow Statement

For the year ended June 30, 2012

	Note	June 30, 2012 Rupees	June 30, 2011 Rupees
Surplus for the year before tax		**8,086,845,574**	4,817,848,436
Adjustments for non-cash items:			
Depreciation on property and equipment	*13.1*	**49,701,000**	56,202,957
Amortization on intangibles	*14*	**1,069,035**	1,069,035
Provision for gratuity	*8.3*	**36,001,459**	28,161,994
Provision for pension		**740,391**	1,831,934
Interest income for the year		**(488,952,071)**	(302,503,379)
Provision for doubtful debts	*25*	**13,995,165**	5,622,759,869
Amortization of deferred grant	*7.2*	**(33,620,698)**	(33,620,698)
Assets written off / gain on sale of property and equipment		**(7,026,183)**	5,558
Loss on foreign currency translation		**-**	105,821
Operating surplus before working capital changes		**7,658,753,672**	10,191,861,527
Changes in assets and liabilities			
Decrease / (increase) in assets			
Advances, deposits, prepayments and other receivable		**(448,313,388)**	(1,110,960)
Fees receivable including initial license fee - net		**11,513,801**	3,256,965,192
Increase in liabilities			
Accrued and other liabilities		**120,493,338**	5,470,265
Contributory provident fund payable		**16,975,145**	19,657,769
		(299,331,104)	3,280,982,266
Cash generated from operations		**7,359,422,568**	13,472,843,793
Contribution to FCF and FAB		**(1,820,725,710)**	(2,491,094,031)
Public Account		**1,591,064,461**	1,494,713,149
Government of AJK & GB		**(37,740,574)**	146,903,102
Income taxes paid		**(7,760,114,645)**	(14,712,593,109)
Interest received during the year		**577,441,311**	164,270,777
Gratuity and pension paid		**(7,929,958)**	(4,384,473)
Net cash used in operating activities		**(98,582,547)**	(1,929,340,792)
CASH FLOWS FROM INVESTING ACTIVITIES			
Purchases of property and equipment		**(2,933,580)**	(7,209,909)
Investment made during the year- net		**(372,685,859)**	-
Proceeds from sale of property and equipment		**7,274,113**	-
Net cash used in investing activities		**(368,345,326)**	(7,209,909)
CASH FLOWS FROM FINANCING ACTIVITIES			
Long term loan repaid		**-**	(57,720,271)
Cash used in financing activities		**-**	(57,720,271)
Net decrease in cash and cash equivalents		**(466,927,873)**	(1,994,270,972)
Cash and cash equivalents at beginning of the year		**626,561,748**	2,620,832,720
Cash and cash equivalents at end of the year	*22*	**159,633,875**	626,561,748

The annexed notes 1 to 31 form an integral part of these financial statements.

Member (Finance) **Chairman**

Annex-2

Telecom Revenues

(Rs. Million)

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Cellular	133,132	182,122	212,423	236,047	262,761	298,509
Local Loop	68,368	63,693	62,568	61,464	58,342	63,157
LDI	15,567	21,983	47,969	44,964	34,195	32,675
WLL	2,645	2,704	2,670	2,880	4,978	5,861
VAS (Estimated)	15,901	8,048	8,179	10,202	7,052	11,174
Total	**235,614**	**278,550**	**333,809**	**355,556**	**367,327**	**411,377**

Annex-3

Foreign Direct Investment

(US$ Million)

	2007-08	2008-09	2009-10	2010-11	2011-12
FDI in Telecom	1,438.6	815.0	373.6	79.2	(361.4)
Total FDI	5,410.0	3,720.0	2,199.4	1,574.0	812.8

Annex-4

Telecom Investment

(US$ Million)

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Cellular	2,584.5	2,337.7	1,229.7	908.8	358.6	211.8
LDI	602.8	403.9	276.7	183.1	108.7	16.2
LL	40.6	342.1	57.3	22.5	18.2	5.0
WLL	747.0	52.8	82.1	23.0	7.6	7.3
Total	3,974.8	3,136.4	1,645.8	1,137.4	493.1	240.3

Annex-5

Cellular Mobile Subscribers

	Mobilink	Ufone	CMPak	Instaphone	Telenor	Warid	Total
Jun 08	32,032,363	18,100,440	3,950,758	321,134	18,125,189	15,489,858	88,019,742
Jun-09	29,136,839	20,004,707	6,386,571	34,048	20,893,129	17,886,736	94,342,030
Jun-10	32,202,547	19,549,100	6,704,288	-	23,798,221	16,931,687	99,185,843
Jun-11	33,378,161	20,533,787	10,927,693	-	26,667,079	17,387,798	108,894,518
Jun-12	35,953,434	23,897,261	16,836,983	-	29,963,723	13,499,836	120,151,237

Annex-6

Provincial Level Outreach of Mobile Banking Agents

March 2012

	Province/Region	No. of Agents
1	Federal Capital Islamabad	384
2	Punjab	16,605
3	Sindh	6,310
4	Khyber Pakhtunkhwa	2,189
5	Balochistan	545
6	Azad Jammu and Kashmir	632
7	Other Areas (GB, FATA)	127
	Total	**26,792**

Source: State Bank of Pakistan

Pakistan Telecommunication Authority

Economic Affairs Team

Dr. Muhammad Saleem, Director General
Mr. Muhammad Arif Sargana, Director
Dr. Shahbaz Nasir
Mr. Abdul Rehman, Assistant Director
Mr. Waqas Hassan, IT Officer
Mr. Muhammad Riaz, Admin Officer

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Azhar, PTA