Liberalizing the Telecommunications Sector: Making Pakistan an Information Economy

Final Report

LIRNE*Asia* Six Country Multi-Component Study 2006-07

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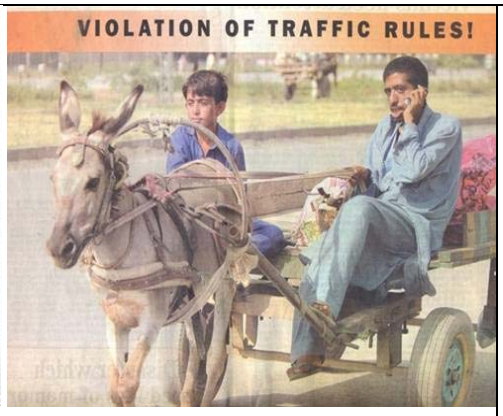

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I. Introduction

Countries have since long recognized the importance of telecommunications industry, and impact it has on the economic and social lives of the people.[1] The developing countries, in particular, have realized that "wealth does not create telephone density, but that telephone density creates wealth."[2] Traditionally, telecommunications services have been provided by the state. The primary rationale adduced by governments to monopolize the provision of telecommunications services was that "because of the high infrastructure costs, network harmonization requirements and the obligation to provide universal service, telecommunication [i]s a 'natural monopoly.'"[3] Competition or market forces, it was thought will not promote universal service and they could not effectively safeguard the consumers' interest. Thus, governments prompted by the desire to safeguard the consumers' interest, introduced regulation as a "substitute for competition." However, the government intervention went so far that virtually everywhere in the world, except in a few countries, such as Canada, the United States and the Philippines,[4] telecommunications services were provided by the government department of Post Telephone and Telegraph (PTT).[5]

In 1984, with the breakup of AT&T and the privatization of British Telecom, a wave of deregulation and liberalization movement got kicked off. [6] Developing countries, however, took their time in joining the deregulatory bandwagon. For example, Pakistan initiated the deregulatory process in 1991 with the corporatization of Pakistan Telegraph and Telephone Department. Corporatization and then privatization of the PTTs served as harbinger for competition in the provision of telecommunications services. Competition is preferred because it maximizes "consumer welfare, or . . ., economic efficiency."[7] Encouragement of competition in the telecommunications sector started taking place in national policies and legislation governing telecommunications in an increasing number of countries.[8]

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[1] ITU, World Telecommunication/ICTs Development Report: *Measuring ICTs for Social and Economic Development*, (Geneva, 2006) at 11. [hereinafter referred to as "WTDR"]. at 23 (The phenomenal growth in information and communication technologies (ICTs) has real implications for economic growth, in both developed and developing countries).

[2] D. Benton, MSS systems advance telecommunications in India, Satellite Communications, v18, n11, p18(1) Nov, 1994.

[3] World Telecommunication Development Report, (ITU, 1994) at p. 50. [hereinafter referred to as "Telecommunication Report"].

[4] *Id.* at 55.

[5] *Id.* at 50.

[6] S. D. Lando, "The European Community's Road To Telecommunications Deregulation," (1994) 62 Fordham L. Rev. 2159 at 2187. (The Thatcher Government passed the Telecommunications Act, which privatized British Telecommunications.)

[7] R. H. BORK, THE ANTITRUST PARADOX, at 427 (Toronto: Maxwell Macmillan, 1993).

[8] For example in:

European Union: Article 3(f) of the EC Treaty states that the activities of the Community shall include "the institution of a system ensuring that competition is not distorted."(EC Treaty, Article 3(f)). In the preface to the EC Treaty, "fair competition" is cited as a key method for removing existing obstacles dividing Europe. (EC Treaty, Preface).

The United States: Telecommunication Act, 1996: "to promote competition and reduce regulation in order to

To further fan the process of liberalization in telecommunications, on April 15, 1994, the Uruguay Round of trade negotiations concluded the GATS Agreement with an annex on telecommunications. The Annex allowed WTO member countries to make use of the GATS provisions of market access, most favoured nation (MFN) and national treatment with respect to "measures affecting access to and use of public telecommunications transport networks and services."[9] However, the Annex failed to cover the basic telecommunications services. In February 1997, a further burst to liberalization in telecommunications services industry was felt when sixty-nine WTO Member countries[10] concluded an agreement liberalising trade in basic telecommunications services, known as the Fourth Protocol to the GATS.[11] The Agreement called for the opening of "markets to competition for domestic and foreign telecommunications network operators and service providers."[12]

With rapid advances in regulatory paradigms and technology in the telecommunications industry, the world has moved towards a Global Information Economy and Information Society, thus shifting the importance from mere "telecommunications" to the Information and Communications Technologies (ICTs).[13] ICTs are defined as the product of services and outputs that are limited to those industries that "facilitate, by electronic means, the processing, transmission and display of information, and it excludes the industries which create the information, the so-called 'content' industries."[14]

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secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies." (PL 104-104 (S 652)).

Canada: Section 7(f) of the Telecommunication Act, 1993: "to foster increased reliance on market forces for the provision of telecommunication services and to ensure that regulation, where required, is efficient and effective." (Telecommunications Act, SC 1993. c. 38. Sec 7(f)).

Pakistan: Section 6 of the Telecommunication Act: to encourage "except subject to the exclusive right of the Company in basic telephone service, *fair competition* in the telecommunication sector."

[9] *Id.*

[10] The following countries made commitments: Antigua and Barbados, Argentina, Australia, Bangladesh, Belize, Bolivia, Brazil, Brunei, Bulgaria, Canada, Chile, Columbia, Cote d'Ivoire, Czech Republic, Ecuador, El Salvador, Ghana, Grenada, Guatemala, Hong Kong, Hungary, Iceland, India, Indonesia, Israel, Jamaica, Japan, Korea, Malaysia, Mauritius, Mexico, Morocco, New Zealand, Norway, Pakistan, Papua New Guinea, Peru, Philippines, Poland, Romania, Senegal, Singapore, Sri-Lanka, Switzerland, Slovak republic, South Africa, Thailand, Trinidad and Tobago, Tunisia, Turkey, United States of America and Venezuela. Plus the 12 members of the European Union. Today the number of countries committing in the basic telecommunications sector is around 75 countries. This figure comprises the 69 participants in the fourth protocol, 4 members that have submitted subsequent schedules, 2 recently acceded countries.

[11] Agreement on Telecommunications Services (Fourth Protocol to the General Agreement on Trade in Services), Feb. 15, 1997, 36 I.L.M. 354 (1997) [hereinafter Telecommunications Services Agreement].

[12] World Trade Organization Concludes Agreement on Telecommunications Market Liberalization, Satellite Engineer: Online Magazine, Scientific Atlanta (visited Sept. 9, 1997) <http://www.satengineer.com/wto.html>.

[13] The ICT market refers to information technology (the combined industries of hardware for office machines, data processing equipment, data communications equipment, software and services) and telecommunications (carrier services, end-users communications equipment, PBX, key systems and circuit switching equipment, cellular mobile radio infrastructure, transmission and other datacom and network equipment). (Source: EITO). WTDR, *supra note* 1, at 37, endnote 34.

[14] OECD, Working Party on Indicators for the Information Society: Guide to Measuring the Information Society, DSTI/ICCP/IIS(2005)6/FINAL, at 101. (The definition permits the immediate gathering of statistics for international comparison in an area of considerable policy importance because of deregulation and technological change.)

Because of the late unfolding of the liberalization process in the developing countries, there is a significant digital divide between the developed and developing countries, that is, differential access to ICTs. Given that access to ICTs is a prerequisite for participation in the Information Society, countries have directed their efforts in providing, and measuring the access of the ICTs to their citizens. Measuring the access to ICTs has received major attention from regional and international organizations over the last few years. The Geneva Plan of Action[15] (GPA) and the Tunis Agenda for the Information Society[16] (TAIS) underlines the need for more comprehensive and reliable statistical information to track the digital divide.

> *Appropriate indicators and benchmarking, including community connectivity indicators, should clarify the magnitude of the digital divide, in both its domestic and international dimensions, and keep it under regular assessment.*[17]

In order to narrow the gap between the digital haves and have-nots, progressive national ICT policies need to be designed keeping in view the local and national level of development and priorities.[18] This requires a clear understanding of the present situation in the country so that achievable targets could be set for the future.[19] This understanding is gained through indicators, which are collected through various means.

While surveys are essential to analyze "the real potential of and barriers to the Information Society, few developing countries carry out ICT related surveys."[20] Another related problem is the lack of comparability of the data. Different countries collect data using different definitions, methodology, timeframe, and so on. Thus, "the Information Society is not only challenged by the digital divide but also by the ***statistical divide***. Today's lack of comprehensive, timely and comparable data is a major barrier to analyzing the status and progress of Information Societies, identifying reliable targets and adapting policies."[21]

Thus, to reap the benefits offered by the communications technology and to narrow the digital divide, effective national ICTs policies (e-strategies)[22] and regulations need to be designed, whose design in turn is dependent on comparable and reliable indicators.

Only recently developed countries have reached a consensus definition of ICTs to have a meaningful assessment of its impact on the economic and social lives.[23] "Little

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[15] Plan of Action, World Summit on the Information Society, Geneva 2003 http://www.itu.int/wsis/docs/geneva/official/poa.html

[16] http://www.itu.int/wsis/documents/doc_multi.asp?lang=en&id=2266|2267

[17] WTDR, *supra note* 1, at 11(quoting WSIS Tunis Agenda for the Information Society, paragraph 113 and WSIS Geneva Plan of Action, paragraph 28b.).

[18] ITU, World Information Society Report, (Geneva, July 2006) at 12. [hereinafter "WISR"]

[19] Id. at page 13.

[20] WTDR, *supra note* 1, at 12.

[21] Id.

[22] E-strategy refers to a plan of action –typically a strategy document written by state leaders– illustrating how ICTs are to be developed and used to achieve the economic, social, development objectives of a country. See Global Trends and Policies (The World Bank, 2006) page 88.

[23] WTDR, *supra note* 1, at pp 25-26.

research has been carried out in developing nations."[24] LIRNEasia has seized this opportunity and undertook to conduct a research in six countries of the South and South East Asia: India, Indonesia, Pakistan, Philippines, Sri Lanka, and Thailand. The research comprises of:

1. Measuring the telecom sector performance through various indicators;
2. Assessing the regulatory framework of respective countries (TRE); and
3. Writing of analytical description of the telecom sector of each country.

This Country Report will focus on Pakistan, and will produce an analytical description of the Telecom sector in Pakistan based on the survey of the telecom regulatory environment, available ICT indicators, and review of legal instruments, government policy documents, and literature pertaining to telecom regulatory framework of Pakistan.

Part II briefly traces the history of the telecom legislation of Pakistan and then documents and analyzes the telecommunications reform and regulatory process that started in 1996 with the enactment of the Pakistan Telecommunications (Re-organization) Act. Part III documents the Telecom Regulatory Environment Survey results and link them to the regulatory changes brought to fore recently, and their impact on the industry as measured through various indicators. Part IV highlights the efforts in promoting ICTs in Pakistan. Part V concludes the paper by identifying the challenges ahead and making recommendations to address them.

II. Telecom Related Legislation/Policies in Pakistan

The regulatory framework governing telecommunications in Pakistan found its roots in the Telegraphy Act of 1876, which was promulgated by the Crown in its colony - British India. Upon its independence in 1947 from the British Empire, Pakistan inherited and adopted the British legal system, *mutatis mutandis*, including the Telegraphy Act of 1885.

A. The Telegraphy Act, 1885

The main objective of the Telegraphy Act of 1885 was to give power to the Government, and to any company or person licensed to provide telecommunication services under the Telegraphy Act of 1876, to place and maintain telegraph lines and posts under and over the property of any person whether private or public bodies.[25]

[24] *Id.*
[25] A. Mahmood, *The Telegraph Act*, (Lahore, Pakistan: Mansoor Book House) at 1.

B. The Wireless Telegraphy Act of 1933

The Telegraphy Act of 1885 empowered the Federal Government to control establishment, maintenance, and working of telegraphs which also included the wireless apparatus. The "possession" of the wireless apparatus was however not covered under the Telegraphy Act. Therefore, the then Indian State Broadcasting Service, whose important source of revenue was the fee on licenses for wireless apparatus, found it difficult to successfully prosecute the possessors of unlicensed wireless apparatus. Since to prove offense under the Telegraphy Act, it was first necessary to locate unlicensed apparatus and then to prove that it was actually been "established, maintained and worked." This inability of the Indian State Broadcasting Service to stop the use of unlicensed wireless apparatus caused considerable revenue loss to it. Thus, to remedy the lacuna in the Telegraphy Act, the Wireless Telegraphy Act was enacted in 1933 which prohibited the possession without license of wireless apparatus, as distinct from the establishment, maintenance and working of such apparatus.[26]

C. The Pakistan Telecommunication Corporation Act, 1991: Corporatization of the PTT

As the wave of privatization and de-regulation spread in North America and Europe, Pakistan also felt its effect. In 1991, the Government of Pakistan, through the enactment of Pakistan Telecommunication Corporation Act of 1991[27], corporatized the PTT into Pakistan Telecommunication Corporation (PTC or the "Corporation"). Under the Act, all assets, liabilities, functions and employees of the PTT were transferred to the Corporation.[28] On receiving the authorization of the Federal Government, the Corporation could offer its shares to the general Public.[29]

Section 6 of the Act set forth the purposes and objectives of the PTC, which, among others, are the following:

(a) to establish, maintain and operate telecommunications;
(b) to plan, promote, organize and implement programs for the provision of telecommunication services in all parts of Pakistan (Universal service provision);
(c) to promote, establish, own, run, and manage any undertaking to manufacture telecommunication plant and equipment in Pakistan;
(d) to promote research and development in telecommunications and to acquire technology from abroad;
(e) to promote human resource development, that is, to promote the skills of PTC employees by education, training and otherwise; and
(f) to maintain liaison with foreign telecommunication administrations, and international organizations pertaining to telecommunications.

[26] Gazette of India, 1933, Part V, p.8.; *See also* section 3 of the Wireless Telegraphy Act, XVII of 1933.
[27] Act No. XVIII of 1991. [hereinafter referred to as the "PTC Act"].
[28] *Id.,* Ss. 3 & 12.
[29] *Id.,* Sec. 13.

D. Pakistan Telecommunications (Re-organization) Act, 1996

The 1996 Act provides for the establishment of:

1. Pakistan Telecommunication Authority;
2. Pakistan Telecommunication Company Ltd.;
3. National Telecommunication Corporation; and
4. Frequency Allocation Board.

1. The Pakistan Telecommunication Authority

Section 3 of the 1996 Act provides for the establishment of the Pakistan Telecommunication Authority (the "Authority"). The Authority is composed of three members appointed by the Federal Government for a term of four years. One of the members is nominated as the Chairman of the Authority, and is entrusted with the administrative powers.

a. Functions of the Authority

The functions of the Authority, among others, are to:

(a) regulate the establishment, operation and maintenance of telecommunication systems and the provision of telecommunication services in Pakistan;
(b) receive applications for the use of radio-frequency spectrum;
(c) promote and protect the interest of users of telecommunication services in Pakistan;
(d) Promote the availability of wide range of high quality, efficient, cost effective and competitive telecommunication services throughout Pakistan;
(e) promote rapid modernization of telecommunication system and telecommunication services;
(f) perform investigative and adjudicative functions with respect to complaints filed by service providers; and
(g) make recommendations to the Federal Government on policy matters relating to international telecommunications.[30]

b. Powers of the Authority

Section 5 of the Act lists the powers of the Authority, which are:

(a) to grant and renew licenses for any telecommunication services;
(b) to monitor and enforce the terms of the licenses;
(c) to receive application for the use of radio frequencies;
(d) to regulate tariffs for telecommunication services;

[30] Section 4 of the Pakistan Telecommunication (Re-organization) Ordinance, 1996 (XXX of 1996) (7 March, 1996, No. F. 2(1)/96 pub.) [hereinafter the "Ordinance"]

(e) to prescribe standards for telecommunication equipment and terminal equipment;
(f) to provide guidelines for, and determine, the terms of inter-connection arrangements between the licensees; and
(g) to issue regulations for exercising its powers and performance of its functions.[31]

The Authority is also responsible for safeguarding the interest of consumers, and for encouraging fair competition in the telecommunications sector, except in the provision of basic telephone services where PTCL was given exclusive rights for seven years starting from January 1, 1996.[32] The exclusive rights of PTCL came to an end in 2003 and since then four (WorldCall, Brain Net, Union Communications, SCO) new companies are licensed to provide fixed local loop services in Pakistan.

2. Pakistan Telecommunication Company Limited

Section 34 of the Act provides for the establishment of Pakistan Telecommunication Company Limited (the "Company" or "PTCL"). The Company is incorporated as public company under the Companies Ordinance of 1984, and officially came into being on January 1, 1996.[33] The principal object of the Company is to provide domestic and international telecommunications and related services consistent with the provisions of the Act. Initially, all shares of PTCL were issued to, or held in trust for, the President of the Pakistan. Section 34(5) prohibits, unless Articles of Association of the Company provides otherwise, any person to control, directly or indirectly, ten per cent or more of the votes on a poll at a general meetings of the Company.

Indeed, the Act was promulgated with a view to sell and/or transfer shares of the Company to private investors and general public. The majority of shares of the PTCL were bought by Etisilat, in 2006, who now manages the PTCL.

3. National Telecommunication Corporation

Section 41 of the Act provides for the establishment of National Telecommunication Corporation (NTC), a body corporate. NTC officially came into being on January 1, 1996,[34] and is granted a license by the Authority on a non-exclusive basis to provide telecommunication services within Pakistan to the armed forces, defense projects, Federal Governments, Provincial Governments, or such other Governmental agencies or Governmental institutions as the Federal Government may determine. NTC is not allowed to sell its capacity on the telecommunication system to any person other than the Government agencies and PTCL, during the period when PTCL enjoys the exclusive rights of providing basic telephone services,[35] which were terminated at the end of 2003.

[31] Ordinance, *supra* note 473 Sec. 5.
[32] *Id.,* Sec. 6.
[33] TELECOM MARKETS, Feb 15, 1996,
[34] *Id*.
[35] Ordinance, *supra* note 473 Sec. 41.

4. Frequency Allocation Board

Section 42 of the Act provides for the establishment of Frequency Allocation Board (the "Board"). With the establishment of the Board, the Pakistan Wireless Board stand dissolved and its functions were taken over by the Board. The Board has exclusive right to allocate and assign portions of the radio frequency spectrum to the Government, service providers, telecommunications system providers, radio and television broadcasters, and public and private wireless operators. However, an application for allocation and assignment of radio frequency spectrum is first made to the Authority, which refers the application to the Board after making such inquiry as it deem fit.[36]

The Board is composed of six members, four of which are the nominees each of the Federal Government, Ministry of Defense (Corps and Signals), Ministry of Information and Broadcasting, and Ministry of Interior. The other two members are the chairman of the Authority and the Secretary of the Ministry of Communications. The Secretary of the Ministry of Communications acts as the Chairman of the Board, whereas the nominee of the Federal Government acts as the Board's Vice-Chairman. In exercise of its powers, the Board seeks guidance from the applicable recommendations of the International Telecommunication Union, its organs, and other international bodies.[37]

G. Protection of Telecom Consumers Regulations, 2006

Under section 4(c) and section 6(f) of Pakistan Telecommunication (Re-organization) Act 1996, it is the function of the PTA to safeguard the interest of the consumers. Pursuant to section 4, the Protection of Telecom Consumers Regulation 2006 was promulgated with the aim to make efficient use of the benefits of competitive environment, where consumer is free to choose among operators and their services. Regulation 4 and other provisions of the Consumer Regulation proscribes the operators from colluding, engaging in anti-competitive practices and abusing the dominant power that would undermine consumer interests, discourages investment and/or provision of quality services. The operators under part four of the Regulation, are required to enter into binding agreement with the consumers. It requires of the operators to implement the code of commercial practices and service contract in its *true letter and spirit* as approved by the Authority. The Regulation provides that any contract between the parties that seeks to gain undue benefit from the consumer may be reviewed by the Authority. Fairness in commercial practices and instances of misrepresentation from the operators may be scrutinized. Consumer data is secured from unauthorized access and use by third parties, and private information is to be dealt as confidential. Consumer complaints once they have been communicated to the operator may be monitored by the Authority to ensure due process. In case an operator is held liable for violation of these Regulations the Authority may impose penalty under section 23 of the 1996 Act.

[36] *Id.,* Sec 43(5)
[37] *Id.,* Sec 43.

E. IT Policy, 2000

In 2000, the Government of Pakistan formed its first IT Policy. The vision was "to harness the potential of Information Technology as a key contributor to development of Pakistan." The mission was to rapidly develop the infrastructure while at the same develop excellently trained human resource capacity.

The objectives laid out in the policy are to:

1. Make the Government a facilitator and an enabler to provide maximum opportunities to the private sector to lead the thrust in development of IT in Pakistan;
2. Develop an extensive pool of trained IT manpower at all levels to meet local and export requirements;
3. Provide business incentives for both local and foreign investors to ensure the development of Pakistan's IT sector (including the software, hardware, and service industries) and the use of its products;
4. Develop an enabling legislative and regulatory framework for IT related issues;
5. Revitalize, emphasis, and support the country's dormant manufacturing and research and development (R&D) potential;
6. Establish an efficient and cost-effective infrastructure that provides equitable access to national and international networks and markets;
7. Set up national databases that are reliable, secure, upto-date and easily accessible. These would be open databases;
8. Promote widespread use of IT applications in government organizations and departments for efficiency improvement and transparency in functioning and service provision, and to organize and facilitate access to public information;
9. Promote extensive use of IT applications in trade, industry, homes, agriculture, education, health, and other sectors with widespread use of internet;
10. Encourage and promote the development of quality software that can capture export markets;
11. Develop a tradition of electronic commerce for both national and international transactions; and
12. Encourage expatriate IT professionals to return to Pakistan and establish software houses or extend assistance to the local industry in the form of assignments from abroad.

F. Telecom Deregulation Policy, 2003

The exclusive rights to provide fixed telecommunications services of PTCL came to end in 2003, which necessitated opening up of competition in the fixed telephony. The

Telecom Deregulation Policy paved the way for bringing competition in the fixed telephony and has the following as its objectives: [38]

1. Increase choice for customers at competitive and affordable rates
2. Promote infrastructure development
3. Increase private investment
    - Encourage Local Manufacturing
    - Encourage Service Industry
4. Expansion of telecom infrastructure to un/under served areas
5. Encourage fair competition among service providers
6. Maintain an effective and well defined regulatory regime

1. Salient features included

a. Open and unrestricted License term: 20 years
b. Technology neutral, Policy review period: 5 Years
c. Licensing categories:
    i. Local Loop Fixed (LL)
    ii. Long Distance Int'l Fixed Telecommunication (LDI)
d. LL licensing for 13 Telecom Regions (based on PTCL regions)
e. Country-wide LDI licenses

The Deregulation Policy seeks to improve the teledensity by promoting competition in the provision of telecom services and by ensuring that rural areas get connected. It also laid out details on license fees, performance obligations, and interconnection and co-location provisions.

2. Tariffs

Tariffs of both – local loop (LL) and long distance international (LDI) licensees are not regulated by the PTA unless the licensee attains the status of "significant market power" (SMP). A service provider is considered to be an SMP when it acquires a market share of 25% or above.

3. Access Promotion Contribution

A portion of the financial premium generated by the net incoming international traffic is proposed to be applied by promoting infrastructure expansion. This portion of the financial premium is referred to as Access Promotion Contribution (APC). The funds from the APC will be available to the LL and LDI licensees on a transparent and non-discriminatory basis for developing fixed line infrastructure with a view to increase fixed teledensity.

For effective collection of the APC, the PTA will supervise the negations of bilateral accounting rates. The negotiations will be done collectively by the LDIs, with

[38] http://www.pakboi.gov.pk/Presentations/IT/De-Reg%20Policy%20-%20BOI%20(23%20Aug%2003)_files/frame.htm

the PCTL taking the lead. The principle of "one country one rate" will be implemented. It may be mentioned that block negotiations and "one country one rate" principle are violative of competition law rules. In order to promote global competition, such position should have not been adopted. It is further argued that APC would act as a barrier for foreign entrants, since the formula applied for APC would not be feasible for an operator using foreign interconnection resources.

4. Obligations on the Incumbent

The policy placed certain obligations on the incumbent, PTCL, to facilitate market liberalization. In addition, PTCL in obliged to install exchanges and lines in rural and under-served area at the same annual average rate as it achieved during the exclusivity period, and in no case less than 83,000 lines per annum until the end of 2008.

G. Broadband Policy, 2004

The objectives of the Broadband Policy are to:

1. Spread an affordable, 'always on,' broadband high speed internet service in the corporate and residential sectors across Pakistan.
2. Encourage the entry and growth of new service providers while stimulating the growth of the existing ones at the same time.
3. Encourage private sector investment in local content generation and broadband service provision.

According to the Economic Survey published by Government of Pakistan in 2004, there were about 1.7 million active internet users in the country.[39] The broadband penetration was estimated to be at 1.6% in 2004, and was restricted to three metropolitan cities. The barriers to growth have been identified as:

- Price: 1600 times higher than Korea
- Last Mile Access: poor copper wire infrastructure, allocation of frequency
- Content: localized and customized applications in all sectors vis-à-vis online activity.[40]

The policy initiative is burdened with infrastructure incapacity. As of June 2006, there were only 56,611 broadband subscribers.[41]

H. Mobile Cellular Policy, 2004

The objectives of the Mobile Cellular Policy are to:

[39] Annual Report of Pakistan Telecommunications Authority 2005
[40] Broadband Policy for Pakistan 2004, Ministry of Information Technology (IT & Telecom Division), Government of Pakistan
[41] PTA, Annual Report 2006 at 85.

1. promote efficient use of radio spectrum;
2. increase choices for customers of cellular mobile services at competitive and affordable price;
3. encourage private investment in the cellular mobile sector;
4. recognize the rights and obligations of mobile cellular operators;
5. encourage fair competition amongst mobile and fixed line operators; and
6. establish an effective and well defined regulatory regime that is consistent with international best practices.

The Mobile Policy is one of the drivers of Pakistan's rapidly increasing teledensity. So far, it is fair to say that the objectives of the Mobile policy are well achieved. Private investment was facilitated by granting two mobile licenses in 2005. At present there are six mobile companies[42] operating in the country. The total mobile subscriber base has grown from 5 million at the end of June 2004[43] to 57 million by the end of May 2007 – a remarkable 11 fold increase in the short span of three years. More about mobile telephone is discussed below.

[42] Instaphone, Paktel, Mobilink, Ufone, Telenor (March 2005), Warid (May 2005).
[43] PTA Annual Report, 2005 at p. 41.

III. Telecom Regulatory Environment Survey Results

During the summer of 2006, a survey on the perception of the telecom regulatory environment was conducted simultaneously in the six countries –India, Indonesia, Pakistan, Philippines, Sri Lanka, and Thailand– under study. For Pakistan, a sample of 125 surveyees was selected from amongst the following four categories of stakeholder in the telecommunications industry:

A: Senior Management of Operators/ Equipment Manufacturers, Industry Association
B: Educational/Research Organizations/Telecom Consultants/Law Firms
C: Journalists/User Groups/ Civil Society/Former Members/Senior Staff of Regulatory Agencies
D: Financial Institutions/Banks

The surveyees were provided with a questionnaire attached as Annex-B hereto. The table below gives a summary of the number of surveyees in each category and the percentage of surveyees responded in that category.

Table1

	A	B	C	D	Total
Total Surveyees	61	27	30	7	125
Number of Surveyees responded in each category	18	16	5	1	40
Percentage of Total surveyees	48.8%	21.6%	24.0%	5.6%	100%
Percentage of surveyees responded	45.0%	40.0%	12.5%	2.5%	100%
Percentage of surveyees responded in the Category	29.51%	59.26%	16.67%	14.29%	32.00%

Figure 1

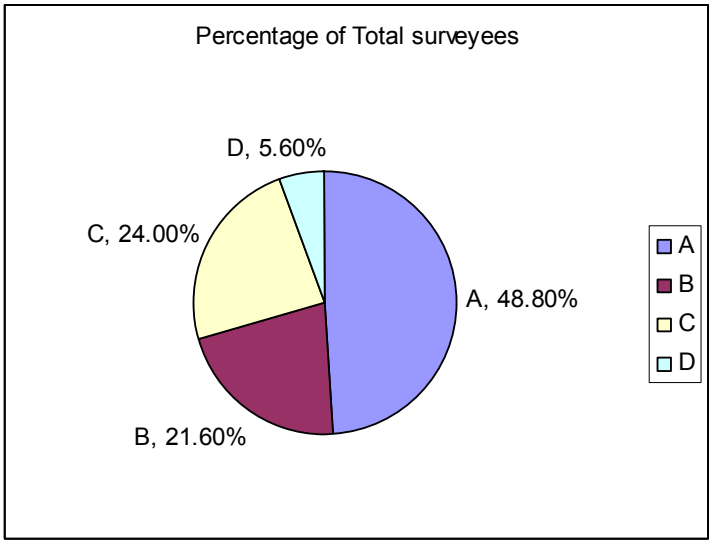
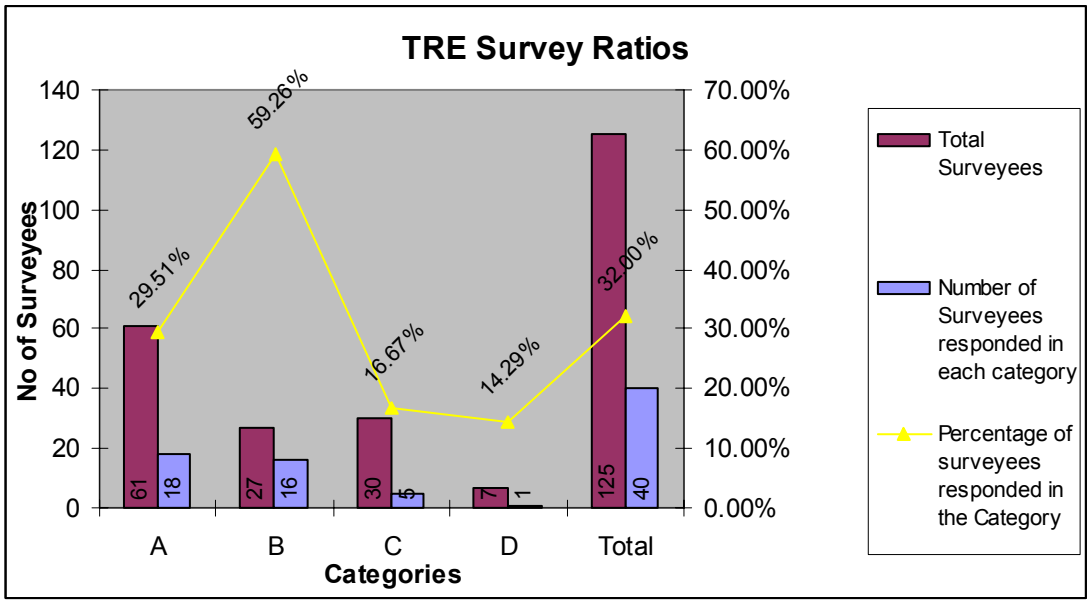


Figure 2



The surveyees were requested to rate the regulatory environment as they perceive it, on a scale of 1 to 5, the following six aspects of market regulation for both the fixed and mobile telephony:

1. Market Entry
2. Access to Scarce Resources
3. Interconnection
4. Tariff Regulation
5. Regulation of Anti-competitive practices
6. Universal Service Obligation

The table below depicts the average score for each category of fixed and mobile sectors.

Figure 3a

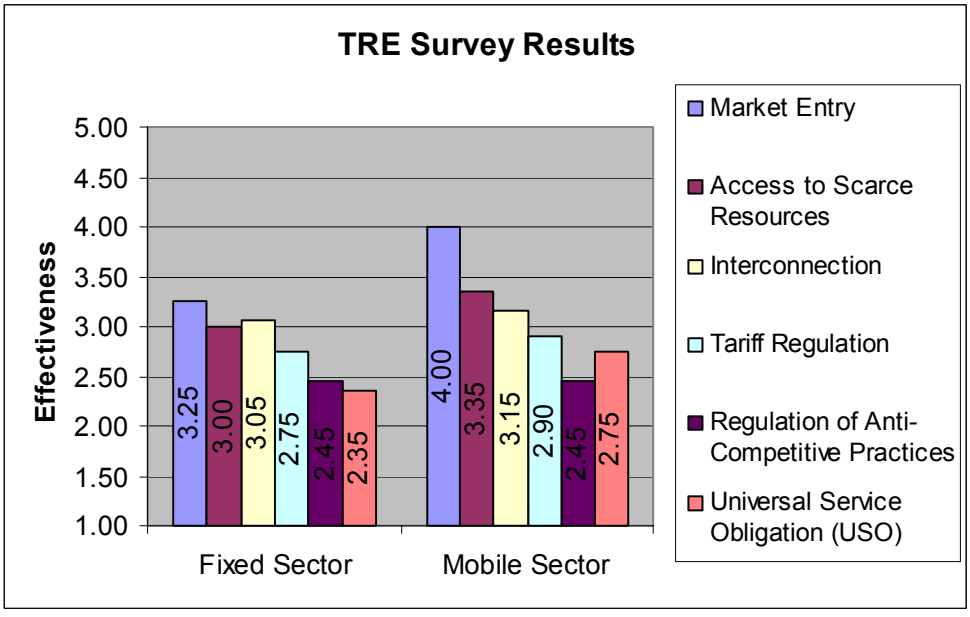
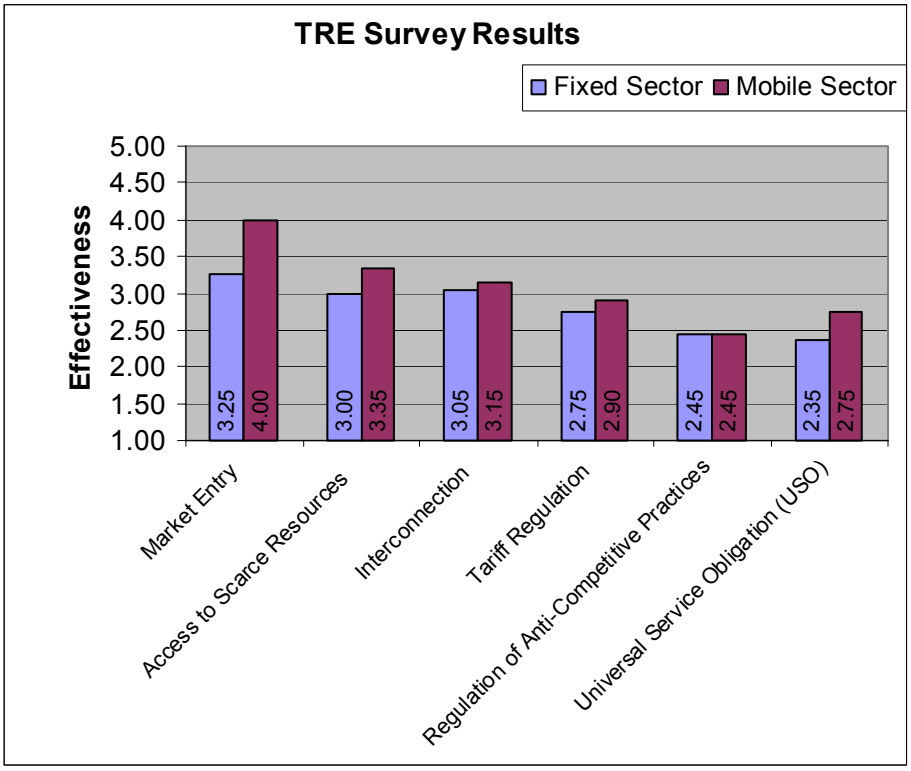


Figure 3b



Here below are some of the observations that are gathered from the survey results.

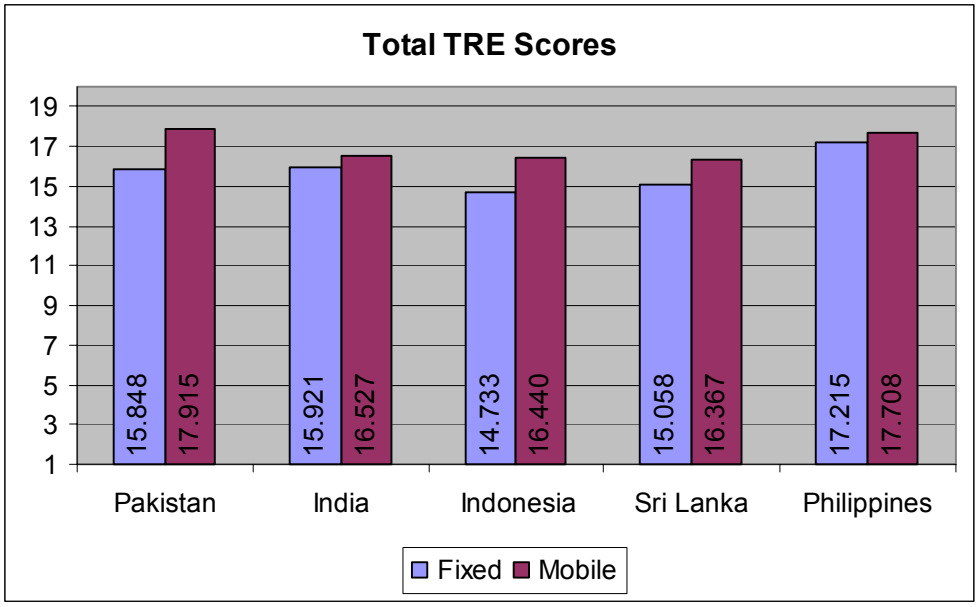
- Out of the sample, 26% of administrators of various telecom companies have participated in the survey and are by and large happy with the state of affairs but seem concerned with the issues of protectionism, competition, infrastructure and access;
- Lawyers have largely criticized the regulator's role in drafting of legislation, issuance of licenses as well its ability to monitor companies and implement universal service fund;
- Advisors and journalists have shown appreciation for the development of telecom services while maintain a critical stance towards PTA.
- Consultants have criticized the spectrum allocations made by the FAB and its implementation in wake of introduction of WLL Services that have essentially replaced Fixed Line Services.

For meaningful comparison across countries, the scores are normalized by giving equal weight to responses received from each category of surveyees. The total normalized TRE scores of five countries for both mobile and fixed sectors are shown in the table below.

Table 2

		Pakistan	India	Indonesia	Sri Lanka	Philippines
Category 1	Count	14 (35%)	16 (32%)	40 (67.8%)	21 (20.8%)	19 (36.54%)
	Weight	0.71	0.78	0.37	1.20	0.68
	Weighted Count	10	12.5	14.5	25.25	13
Category 2	Count	2 (5%)	4 (8%)	2 (3.4%)	17 (16.8%)	2 (3.85%)
	Weight	5.00	3.13	7.38	1.49	6.50
	Weighted Count	10	12.5	14.5	25.25	13
Category 3	Count	16 (40%)	16 (32%)	11 (18.6%)	21 (20.8%)	16 (30.77%)
	Weight	0.63	0.78	1.34	1.20	0.81
	Weighted Count	10	12.5	14.5	25.25	13
Category 4	Count	8 (20%)	14 (28%)	6 (10.2%)	42 (41.6%)	15 (28.85%)
	Weight	1.25	0.89	2.46	0.60	0.87
	Weighted Count	10	12.5	14.5	25.25	13
Total		**40**	**50**	**59**	**101**	**52**

Figure 4



Pakistan gets the maximum score in the mobile sector, while Philippines received highest score in the fixed sector. Scores received in individual category in the mobile and fixed sectors are shown in the tables below.

Figure 5
Mobile Five Country Comparison

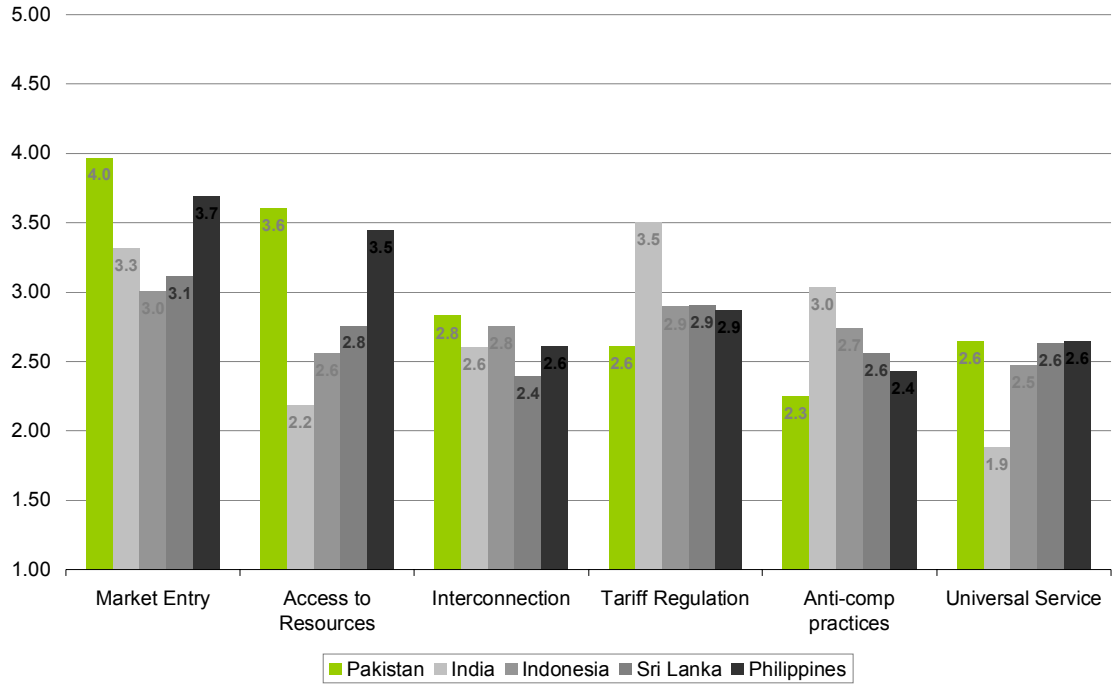
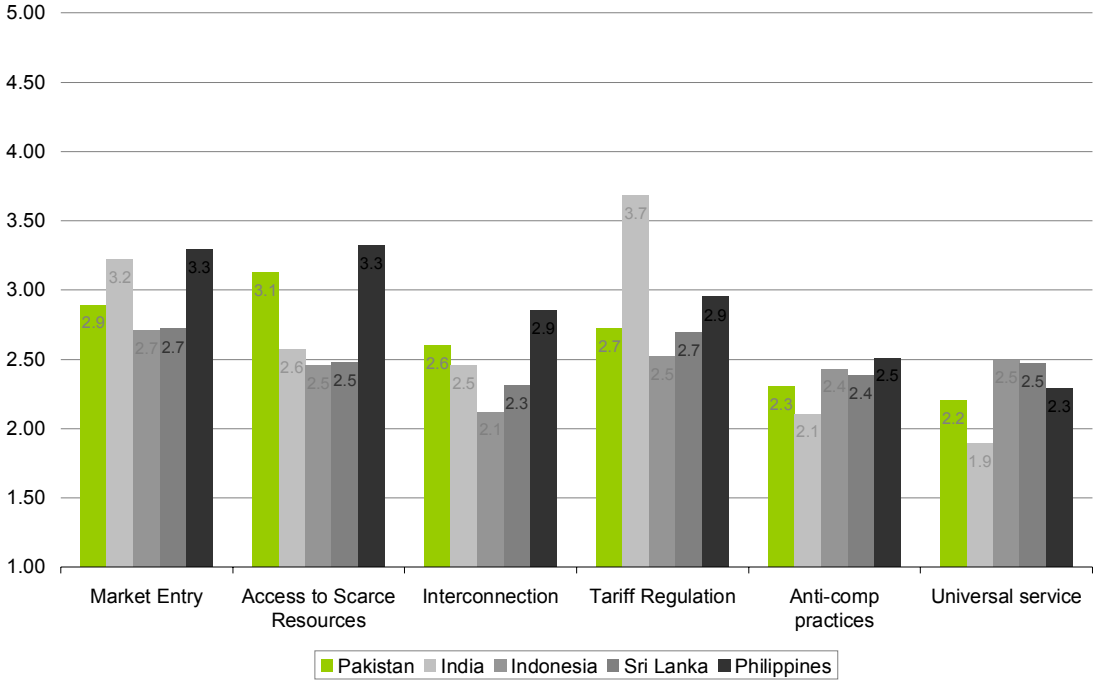


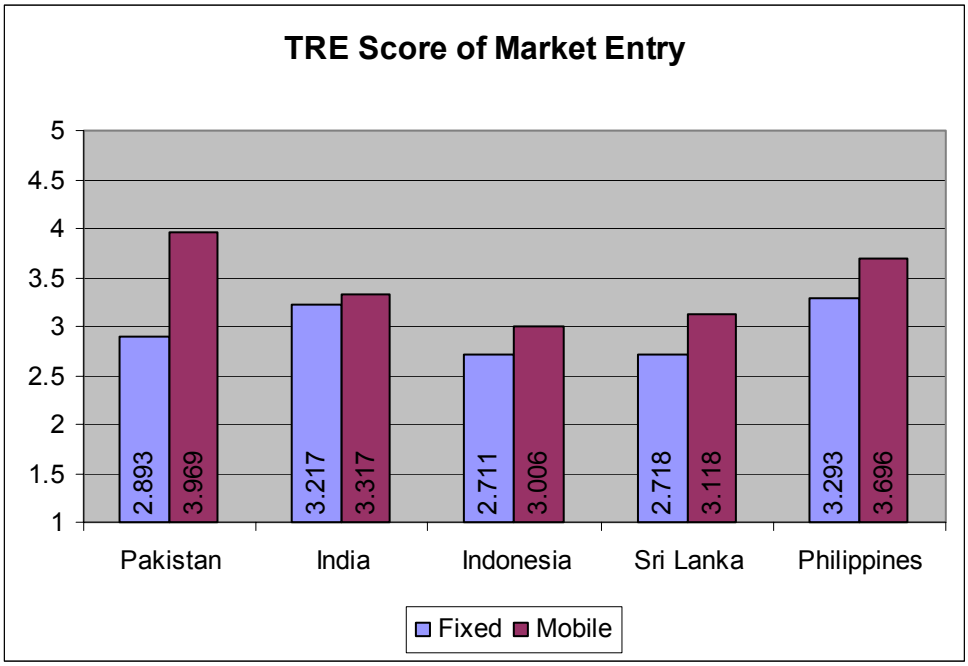
Figure 6
Fixed Five Country Comparison



Here below we will relate the TRE survey results with the policy initiatives taken by the Pakistan Telecommunication Authority (PTA), and measured through various indicators.

A. Market Entry

Figure 7



Pakistan enjoys the highest TRE score (compared to other four countries in the study) for market entry in the mobile sector and third highest of 2.89 behind Philippines and India for market entry in fixed telecommunications. The high score may be attributed to PTA's policy of unbundled (service-based) licensing regime, as opposed to unified licensing regime adopted by the Indian Department of Telecom.[44]

Telecom De-regulation Policy of 2003 ["TDP"] (for fixed telephony) and the Mobile Cellular Policy of 2004 ["MCP"] paved the way for new entrants in the fixed and mobile telecommunications sectors respectively. On the heels of TDP, PTA awarded 38 fixed local loop (FLL) licensees in 14 telecom regions of Pakistan in the first round of awarding licenses. The licensees are required to establish at least one network connection point in their respective licensed region within 18 months of receiving certificate to commence services from the Authority. However, as of December 2006, only four companies –Brain Limited, Union Communication, WorldCall Broadband, and WorldCall Multimedia– have started operation since receiving commencement of service certificates. However, five more companies have become operational during the quarter January to March 2007, bringing the total number of companies operational to nine.

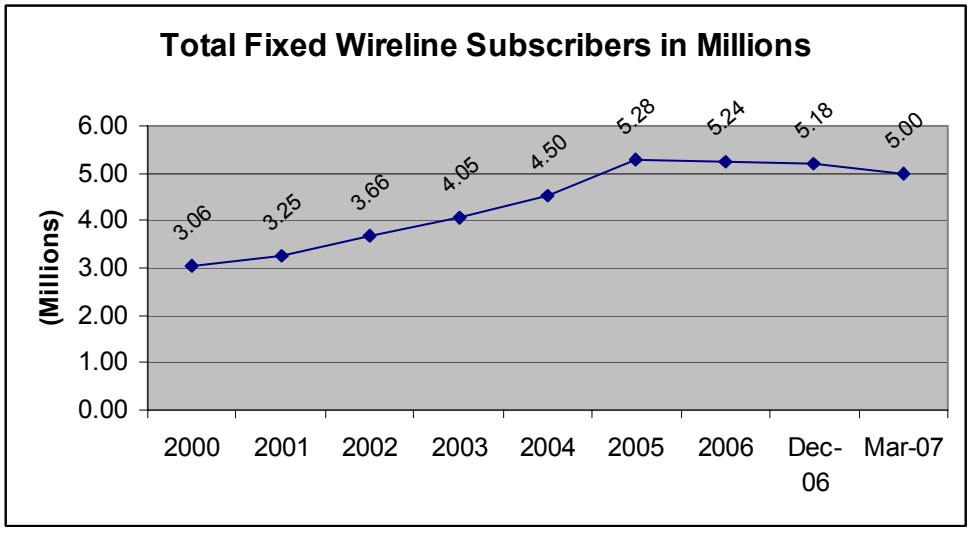
[44] In India, the licenses are issued by the Department of Telecom. Telecom Regulatory Authority of India (TRAI) does not have the power to grant licenses.

Table 3

Status of FLL Licensee as of March 2007	**No. of Companies**
Fully Operational	9
Partially Operational	2
Inspection Underway	4
Extension Requested	3
Issues with PTCL	2
Transfer Cases	2
Rollout Deadline Due	10
Non-operational	6
Total	38

PTCL enjoys 98% of the FLL market share. Despite new entrants, the fixed line teledensity is declining. As of December 2006, it stood at 3.2% compared to 3.4% in December 2005.[45]

Figure 8



Note: A particular year represents data from July Year -1 to June Year.

Table 4

Fixed Line Subscribers by Company and Province as of December 2006

	Punjab	**Sindh**	**NWFP**	**Balochistan**	**Pakistan**
PTCL	2,841,903	1,454,224	674,366	131,078	5,074,571
NTC*	57,822	25,065	8,577	3,249	94,713
WorldCall	1,181	8,590			9,771
Brain Net	4,877				4,877
Union Communication	200				200
Total	**2,905,983**	**1,487,879**	**655,943**	**134,327**	**5,184,132**

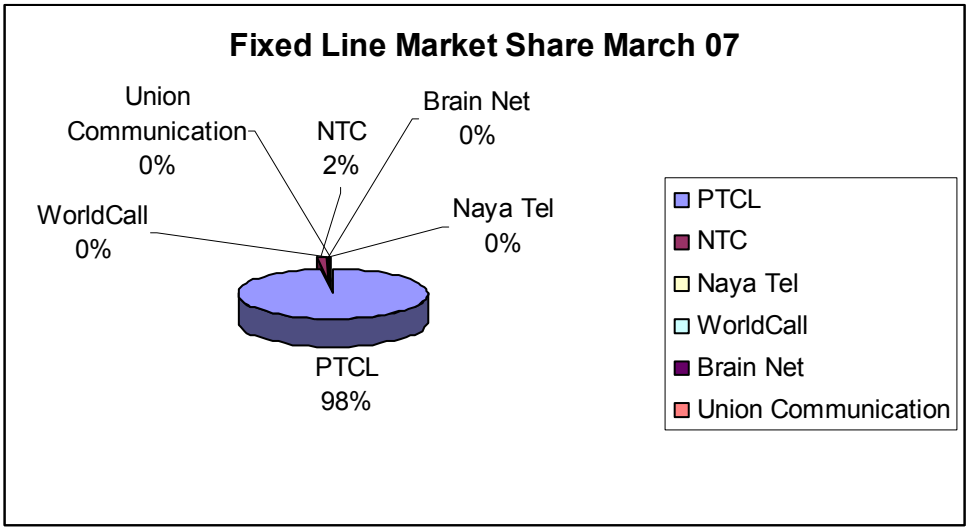
* As of September 2006

[45] PTA, Quarterly Report, Jan. 2007

Table 5
Fixed Line Subscribers by Company and Province as of March 07

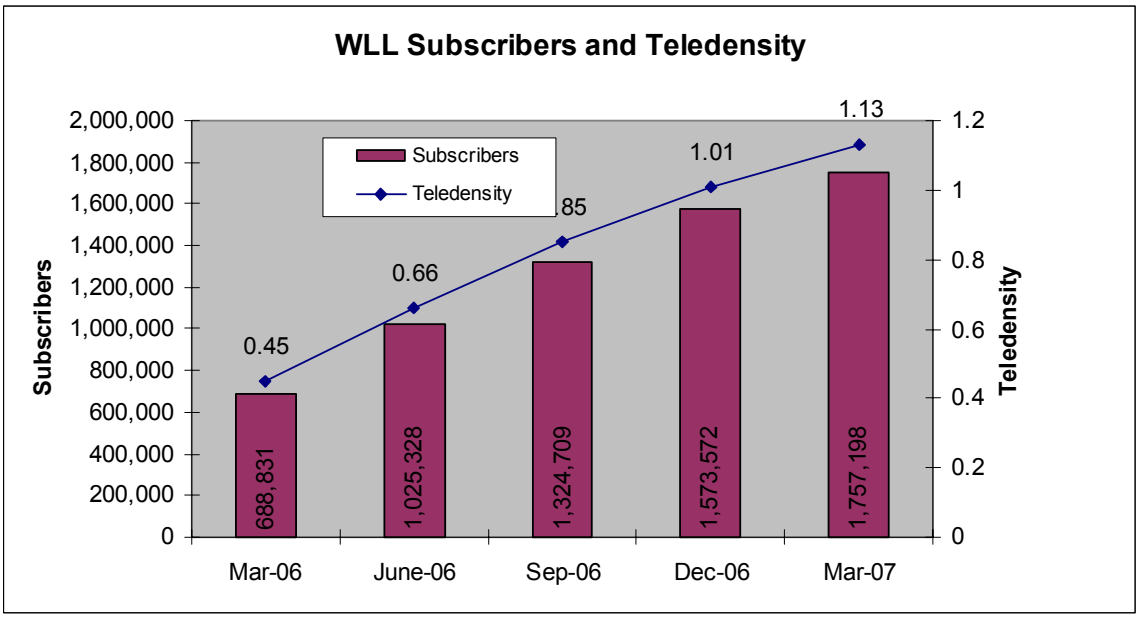
	Punjab	Sindh	NWFP	Balochistan	Pakistan
PTCL	2,846,592	1,383,629	619,572	34,814	4,884,607
NTC	58,786	24,827	9,257	3,295	96,165
Naya Tel	563	0			563
WorldCall	1,331	8,994			10,325
Brain Net	5,401				5,401
Union Communication	2,000				2,000
Total	**2,914,673**	**1,417,450**	**628,829**	**38,109**	**4,999,061**

Figure 9



The decline in FLL subscriber-base is partly due to introduction of wireless local loop (WLL) service, which has shown considerable growth in the last two years. 17 licenses were issued for WLL services; however, only four companies –PTCL, Telecard, Great Bear, and WorldCall – are providing services at the moment.

Figure 9



During the last three quarters, an average of 243,957 subscribers is added to the WLL subscriber-base. As of March 07, the WLL density stands at 1.13%. PTCL has extended its WLL services to 1080 cities/towns.[46] An estimated 40% of total population is covered by WLL services. However, the low penetration is attributed to: non-availability of required investment to the service providers; non-availability of equipment in some frequency bands; and higher tariffs for low-income target market.[47]

Mobile cellular subscriber-base grew rapidly since the entry of Telenor in March 2005 and Warid Telecom in May 2005. In a short span of two and a half year, the mobile teledensity quadrupled from 7.88% in June 2005 to 32.7% in January 2007. This is remarkable growth. The competition offered by the new entrants brought the tariffs down, making it more affordable for the people to subscribe to mobile telephony.

[46] PTA, TQR Jan 2007 at 20.
[47] PTA, Annual Report 2006 at 77.

Figure 10

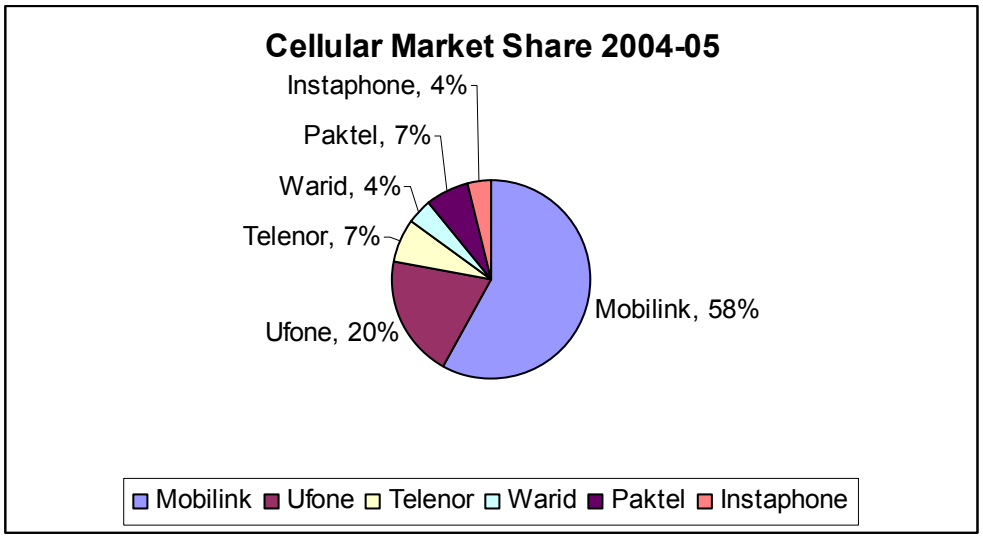
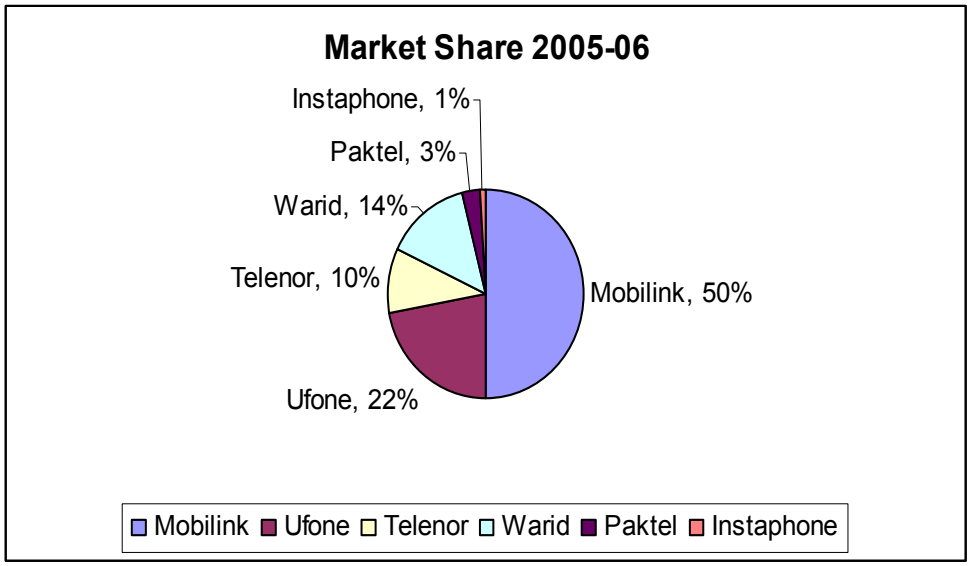


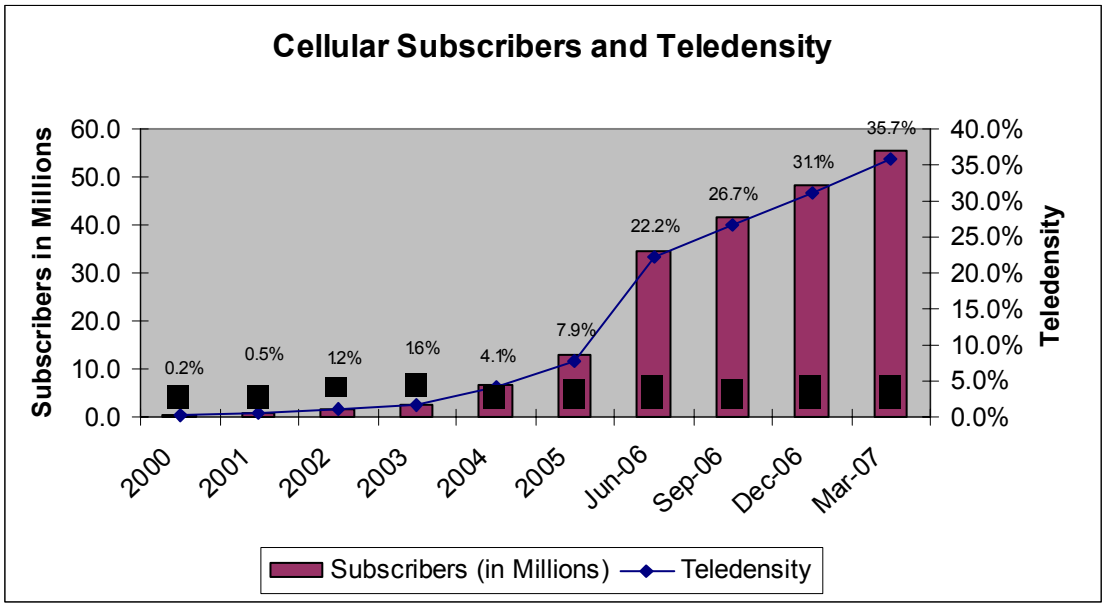
Figure 11



During the year 2005-06 the market share of Telenor grew by 3%, while that of Warid by 10% and Ufone by 2%. Mobilink, the dominant market player, lost 8 % of the market share, while Instaphone and Paktel lost 3% and 4% respectively.[48]

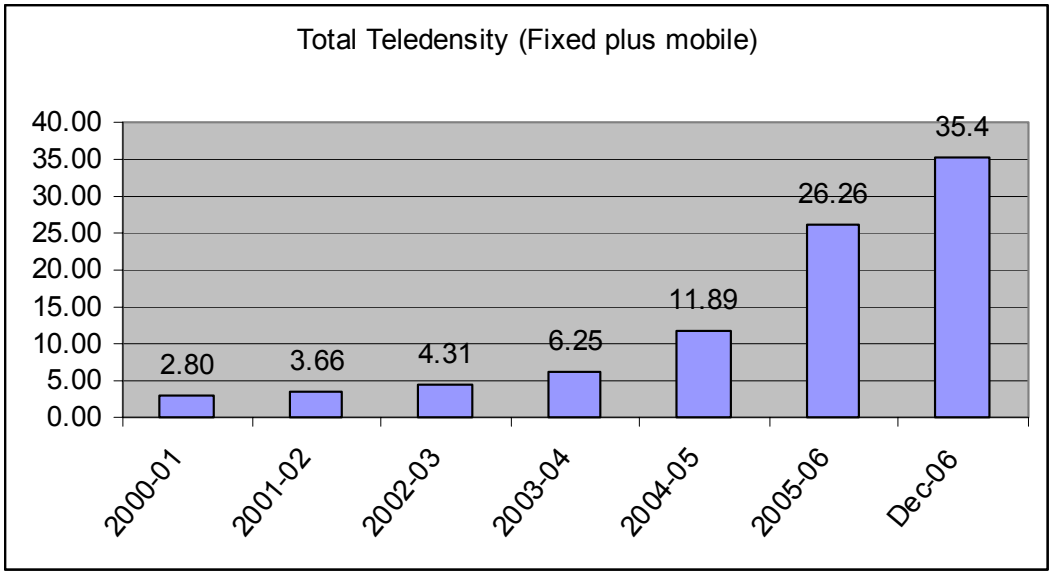
[48] For latest figures see Figure 24 below.

Figure 12



As of March 2007, the total teledensity stands at 35.7%

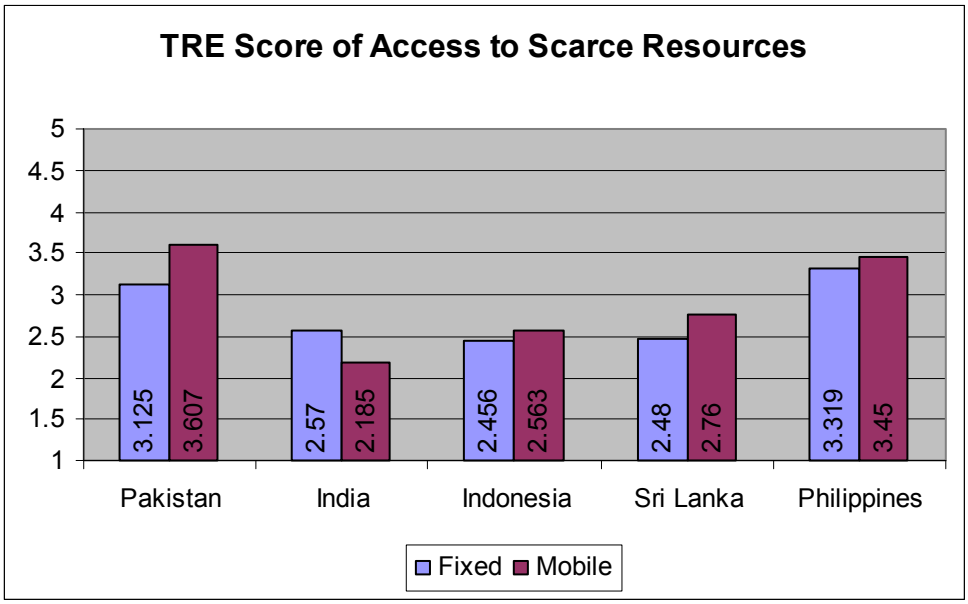
Figure 13



Opening up of competition in the fixed line telephony, coupled with entry of two major service providers in the mobile sector has tremendous effect on the growth and spread of telecommunications in Pakistan. Additionally, it attracted large foreign direct investment in Pakistan. FDI is dealt more in detail under Section IV.

B. Access to Scarce Resources

Figure 14



Pakistan once again scored the highest with 3.6 in the access to scarce resources category in the mobile sector. While in fixed sector Philippines topped in the category by scoring 3.3.

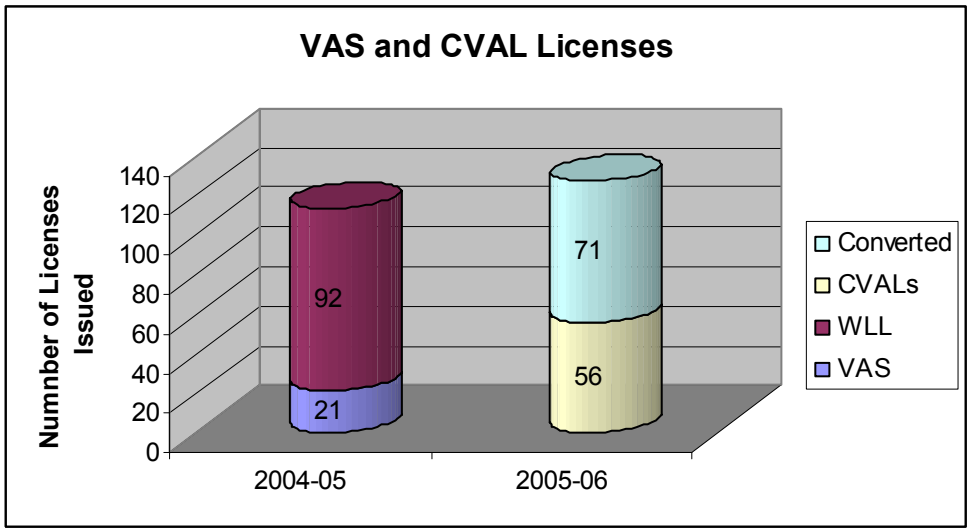
Section 2(qc) of the Telecommunication (Re-organization) Act 1996 defines scarce resources as "radio frequency spectrum, right of way, and number." Radio frequency spectrum is the main scarce resource, which is used by both the mobile sector and the fixed sector – wireless local loop being part of the fixed telephony. Section 4 of the Act requires the Authority to "receive and expeditiously dispose of applications for the use of radio-frequency spectrum." The Authority allocates radio-frequency spectrum through the Frequency Allocation Board under Section 42 of the Act. The Board is composed of six members with representation from all relevant ministries. The Board acts in accordance with the recommendations of the International Telecommunication Union, its organs, and other international bodies.[49]

Para 4.4.8 of the De-regulation Policy required of the FAB to process applications for the allocation of radio spectrum (RS) within a period of 30 days. For expeditious dealing with RF application and for effective management and monitoring of RS, National Frequency Management and Monitoring System (NFMMS) is established. For monitoring spectrum interference among operators, a number of fixed and mobile monitoring stations are set up, with state of the art monitoring hardware and software that enables the monitoring stations to effectively monitor the frequency spectrum in various frequency bands. On the management side, National Control Centres are established across the country with the capability of "performing real time and swift analyses of the applications / proposals of applicants and optimizing the use of the available spectrum

[49] *Id.,* Sec 43.

while securing the license conditions." The legal requirement of processing applications within a period of 30 days, coupled with technological capability to assess potential interferences with other operators have allowed FAB to clear RS applications expeditiously. So much as, in the year 2004-05, a total of 103 licenses of WLL and VAS services using RS were issued.

Figure 15

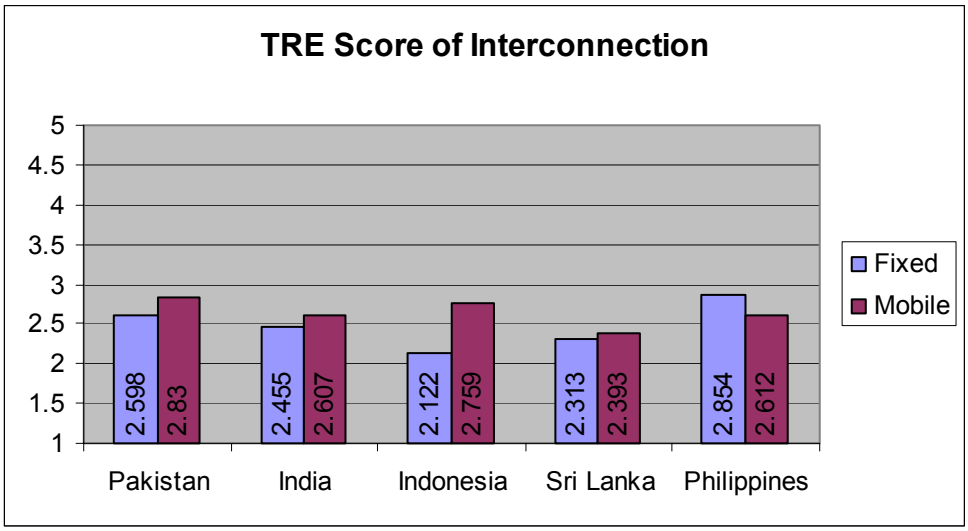


Number being another scarce resource, with the implementation of Mobile Number Portability, which allows subscribers to retain the number if they change the service provider, the perception for access to scarce resource should improve even more and will also boost competition.

In the fixed telephony however, it is not clear why the score is low, given that a number of licenses for the provision of WLL services. One explanation might be that the surveyees perceived WLL as part of the mobile sector as opposed to fixed.

C. Interconnection

Figure 16



Pakistan once again got the highest score of 2.83 for mobile interconnection and second highest of 2.59 in the fixed interconnection.

Rule 13 of the Pakistan Telecommunication Rules, 2000 [PTR] mandates each operator to negotiate an interconnection agreement with another operator who requests for such interconnection.[50] As a general rule, operators are free to negotiate their interconnections agreement in accordance with the procedure laid down by the PTR. However, where an operator attains a significant market power (SMP), it is then required "to produce a Reference Interconnection Offer (RIO) detailing the services and tariffs they provide to other licensed operators."[51] Thus, in the case of fixed telecom sector where PTCL is the SMP, the PTA, under the Telecom De-regulation Policy of 2003, harmonized the interconnection agreement with the PTCL, by issuing a "Reference Interconnection Offer" till the time the PTA determined the pricing based on Long Run Incremental Cost (LRIC).

1. Nature of Disputes Arising out of Interconnection Agreement

Given below is list of nature of disputes that commonly arise out of interconnection agreements:

1. Disputes related to calculation of minutes, with respect to usage of the system and accumulation thereof;
2. Power distribution network issues: laying, extension and termination of power cable/equipment at the co-location sites;
3. Bearing of the costs of any modification to be made in the system for interfacing and making it compatible with existing and future networks;
4. Issues related to provisioning and maintenance of the hardware & software systems;

[50] **13. Interconnection between connectable systems.-** (1) Each operator hereinafter referred to as the "**relevant operator**", shall, on the request of another operator, negotiate an agreement to interconnect that other operator's telecommunication system to its telecommunication system.

[51] Mobile Cellular Policy, 2004 Section 5.10.

5. Indemnification of claims on account of non-operation of Services;
6. The exclusivity of services to be offered under an interconnection Agreement and any violation of the terms and conditions;
7. Sublet or resale of the services to any other party or ask for any business other than specified in the interconnection agreements;
8. The disputes related to unauthorized routing of the traffic;
9. Denial of physical access by the authorized personnel of the Operators to premises where System is or is proposed to be installed;
10. Tariff changes without mutual agreement;
11. Delay in clearing the payment of bills;
12. Blocking the traffic without notice on non-payment etc basis;
13. Denial to provide inter-exchange, domestic and international connectivity, bandwidth and leased lines where available at standard rates as and when requested by the operator;
14. Any dispute on technical arrangements, *i.e.*, connectivity , quality and compatibility etc.;
15. Disputes related to review of the interconnect agreements;
16. Disputes related to force majeure events and determination of factual position relation to continuation of it;
17. If the other commits a material breach of the interconnect Agreement, which is capable of remedy and the Party in Breach fails to remedy the breach within time specified in the agreement; and
18. Introduction of an equipment which has not been approved in advance by PTA.

2. Dispute Settlement & Arbitration

A typical interconnection agreement normally has the following clauses for dispute resolution and arbitration.

1. The Parties shall use their best efforts to settle amicably all disputes arising out of or in connection with the Interconnection Agreement or its interpretation. And dispute between the Parties as to matters arising under the Agreement which cannot be settled amicably within 10 (ten) business days after receipt by one Party of the other Party's request for amicable settlement may be submitted by either Party to the Pakistan Telecommunications Authority for its resolution.

2. If the dispute referred to the Authority and the Authority does not have the power under relevant laws, either party may refer the dispute to Arbitration and the same shall be settled by arbitration by *2* (two) arbitrators: one each to be appointed by the Parties. The parties shall appoint such arbitrators within 10 (ten) business working days of receipt of the first notice in this behalf by a Party. In case of disagreement among the arbitrators or if they arc unable to resolve the matter within thirty (30) days thereafter, the matter will be referred to an umpire nominated by both parties or their arbitrators who shall preferably be retired judge of the High Court of a province or the Supreme

Court of Pakistan. The award given by the arbitrators as aforesaid shall be binding on the Parties.

Where an operator can not reach an agreement on an interconnection agreement, or if there is a dispute arising out of a subsisting interconnection agreement, and the interconnection agreement does not provide for a reasonable, independent and legally binding alternative dispute resolution mechanism, the operator may file a claim with the PTA under the Interconnect Dispute Resolution Regulations, 2004 [IDRR].

3. Dispute Resolution Scheme/ Process at PTA

Following is the procedure followed for resolution of disputes before the PTA.

1. The aggrieved party (Claimant) gives a written notification to the Authority claiming contravention by the other party (Respondent) of the provisions of the agreement and consequence of the inability of the Claimant and the Respondent to agree on an interconnection arrangement; or a dispute arising out of a subsisting interconnection agreement, and such failure to agree continues for sixty days after the request for interconnection arrangement was made or the dispute was raised.

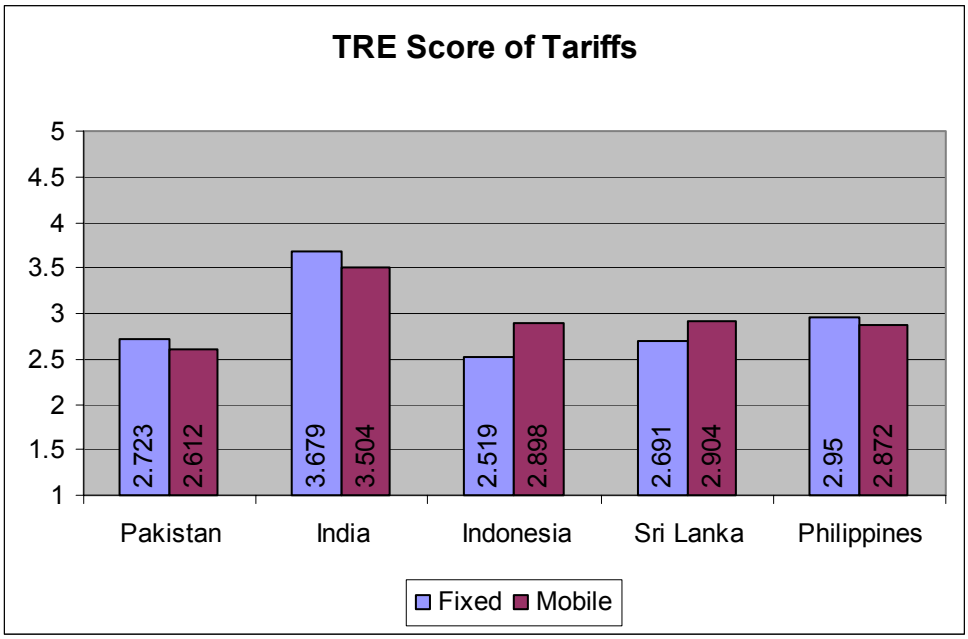
2. The Claim discloses a genuine attempt on the part of the Claimant to negotiate the dispute with the Respondent

3. The Claim makes out a prima facie case of contravention by the Respondent of its express or implied obligation under the provisions of the Act, the Rules or Regulations made there under or its license

4. The parties are unable to reach agreement; a mere claim of likely damage to the commercial interests is not sufficient to assert confidentiality. The party claiming confidentiality must show how the information could be used by the other party and the damage it would cause to the disclosing party.

D. Tariff Regulation

Figure 17



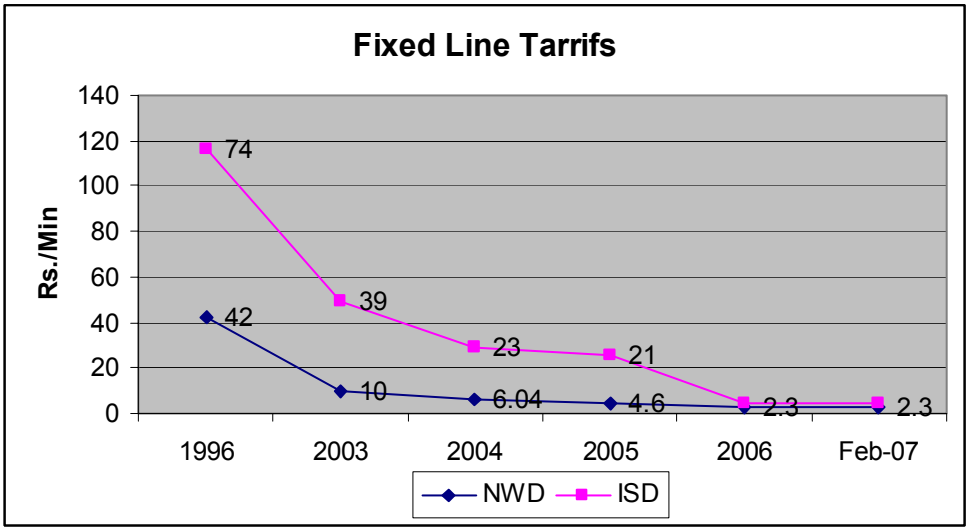
Pakistan scored low in the mobile and fixed tariff regulation compared to other countries. This is despite the fact that Pakistan has lowest tariffs both in the mobile and fixed sectors in the region.

Section 3 of the Fixed Line Tariff Regulations 2004 stipulates that "the non-SMP (significant market power) operators are free to set and revise their tariffs at any time and in any manner as they like." The operators should however inform the Authority of their proposed tariffs thirty days prior to the applicability of the new tariffs. In case the Authority finds the tariffs unfair and burdensome, it may amend the tariffs, and its decision shall be final and binding.[52]

Fixed line tariffs –both for nation wide dialing (NWD) and international subscriber dialing (ISD)– have phenomenally decreased from Rs. 42/min in 1996 to Rs. 2.3/min in 2006 for the NWD and from Rs. 74/min in 1996 to Rs. 2.3/min in 2006 for the ISD. The reduced fixed line tariffs, in addition to other factors including international settlement rates, etc, could partially be attributed reduced regulatory fee from 4% to 1.5 %.

[52] Section 3, Fixed Line Tariff Regulations, 2004, S.R.O. 797(I) 2004 published in The Gazette of Pakistan (Extraordinary) Sept. 20, 2004 at 2746.

Figure 18



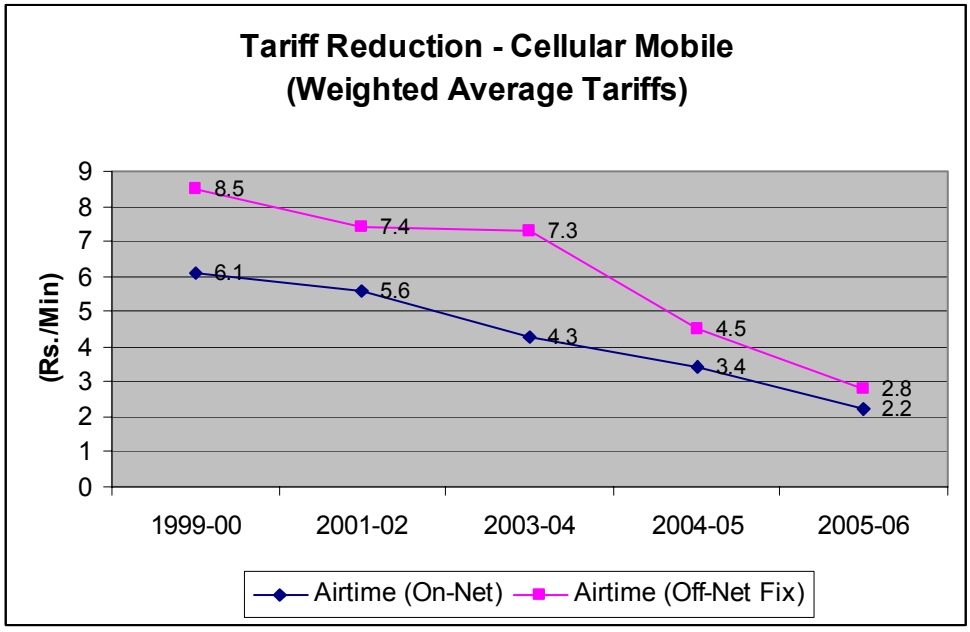
Source: PTA

Mobile Sector

Similar to fixed line tariff regulation, mobile cellular operators who are non-SMPs are free to set and revise their tariffs. SMPs tariffs are regulated by the Authority. In its Determination No. 15-46/01 (Tariff)/PTA fated 25th August 2004, the Authority has declared Mobilink as the SMP in the mobile cellular telecommunications market across Pakistan, and PTCL as the SMP in the LL and LDI fixed line telecommunications market across Pakistan. In the case of SMPs, tariffs are regulated by the PTA.

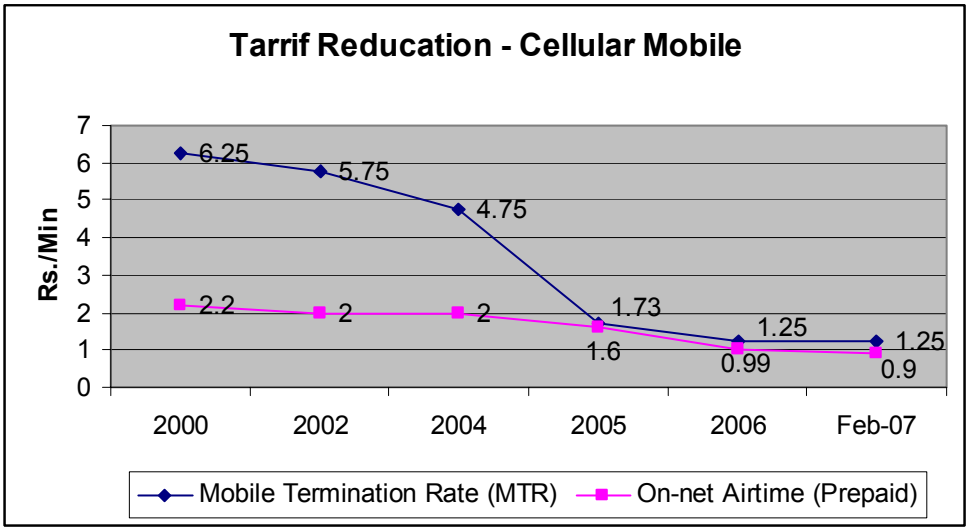
In the mobile cellular sector, a significant change took place in May 2001 when the tariff mechanism changed from Mobile Party Pays to Calling Party Pays. Since then there has been significant reduction in the cellular mobile tariffs. (See the chart below).

Figure 19



Source: PTA Annual Report, 2006

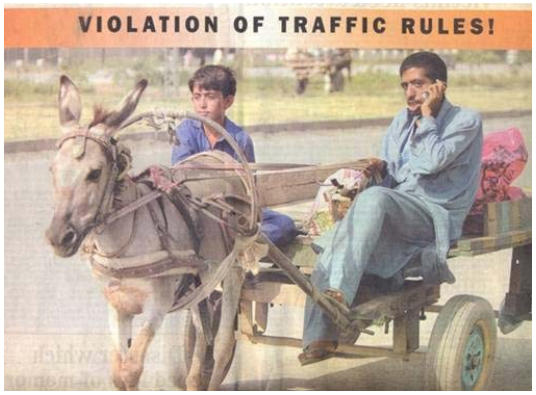
Figure 20



Source: PTA

The availability of low denominations prepaid cards (as low as 50 cents) have sky rocketed the growth of prepaid connections, displaying a nearly 16 times growth in the last four years. Post-paid user friendly packages have also demonstrated steady growth.

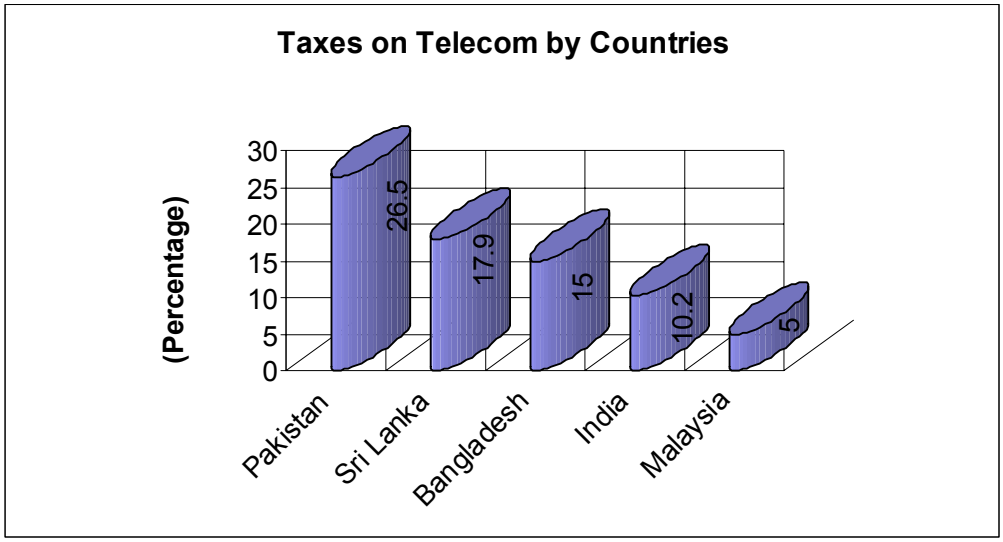
The reduced mobile cellular tariffs have made the mobile services accessible by the poor man as well. The following pictures say it all!



However, the low score on the TRE for tariffs may be attributed to the high taxes imposed by government of Pakistan on telecommunications service providers and consumers. Corporate taxes including General Sales Tax (GST) and Withholding Tax are significantly higher in Pakistan than in other countries. In addition, Activation Tax, Central Excise Duty, Sales Tax, and Advance Tax added in the consumers' bill has adverse bearing on the cost of telecom services.

A comparison of the Sales Tax and Withholding Tax on mobile sector in Pakistan with other regional countries shows that Pakistan's mobile sector is paying 21.5 % higher than Malaysia, 16.3% higher than India, and 8.6% higher than Sri Lanka.

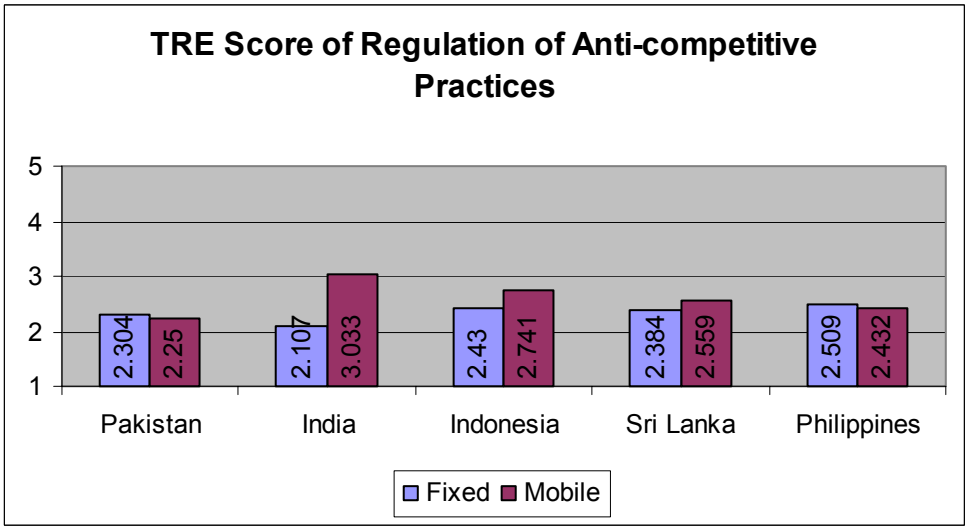
Figure 21



Source: PTA Annual Report, 2006

E. Regulation of Anti-competitive Practices

Figure 22



Pakistan scored low in the regulation of anticompetitive practices. The low score on the TRE reflects the impression that the anti-competitive practices of significant market players -PTCL and Mobilink- are not monitored and controlled by the Authority.

Section 4(d) of the Pakistan Telecommunications (Re-organization) Act 1996 (Amended 2006) mandates the Authority to "promote the availability of a wide range of

high quality, efficient, cost effective and *competitive* telecommunication services throughout Pakistan." Section 6(e) complements the duty to promote competition by requiring the Authority to ensure that "fair competition in the telecommunication sector exists and is maintained." In 2006, the Act was amended by giving the Federal Government powers to make rules for "preventing, prohibiting, and remedying the effects of anticompetitive conduct by licensees."[53]

In order to maintain fair competition in the telecommunications market, the Authority regularly monitors the market to ascertain player with Significant Market Power (SMP). Once an SMP is determined, the Authority incorporates provisions prohibiting anti-competitive practices in their licenses.[54]

In order to determine operators who have an SMP status in the relevant markets, Rule 17 of the Pakistan Telecommunications Rules, 2000 has laid down the criteria as follows:

> *17- (1) An operator shall be presumed to have significant market power when it has a share of more than twenty-five per cent of a particular telecommunication market. The relevant market for these purposes shall be based on sector revenues.*
>
> *(2) The Authority may, notwithstanding sub-rule (1), determine that an operator with a market share of less than twenty-five per cent of the relevant market has significant market power. It may also determine that an operator with a market share of more than twenty-five per cent of the relevant market does not have significant market power. In each case, the Authority shall take into account the operator's ability to influence market conditions, its turnover relative to the size of the relevant market, its control of the means of access to customers, its access to financial resources and its experience in providing telecommunication services and products in the relevant market.*

In the mobile sector, as of June 2006, Mobilink with a market share of 50% clearly has the significant market power. However, market for mobile services is becoming competitive. In the three quarters from July 2006 to March 2007, Telenor increased its market share by 6.3%, Warid by 2.1%, while Mobilink lost its market share by 5.7%.

Figure 23

[53] Section 57(2)(ad), Pakistan Telecommunication (Re-organization) (Amendment) Act,2006.
[54] ¶ 5.10, Mobile Cellular Policy, 2004.

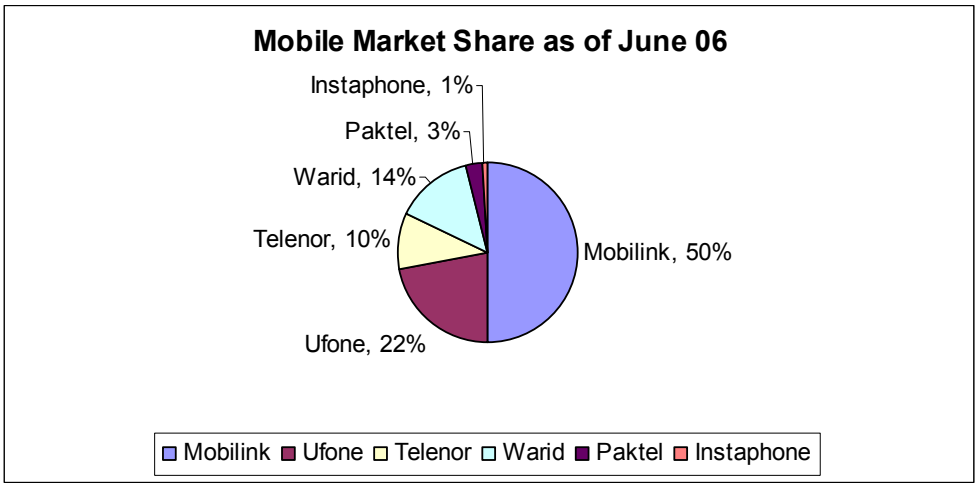
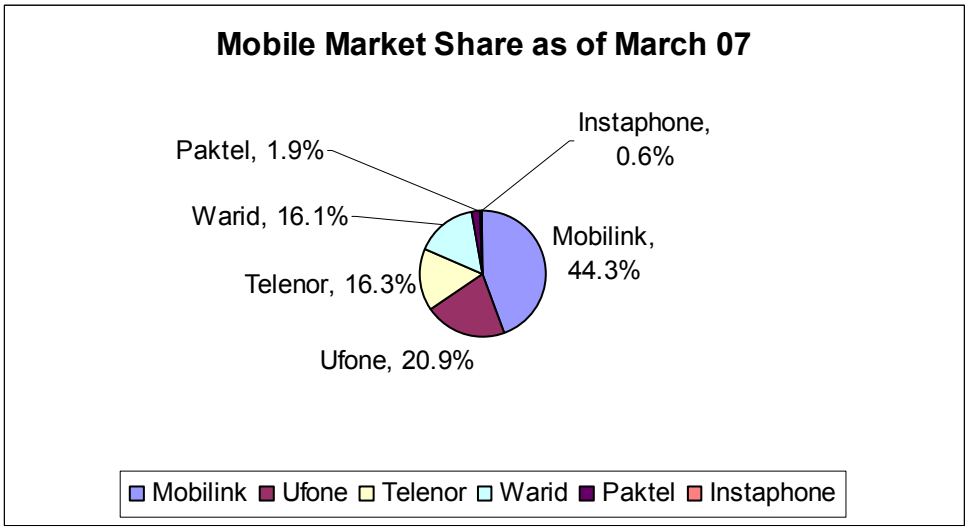


Figure 24



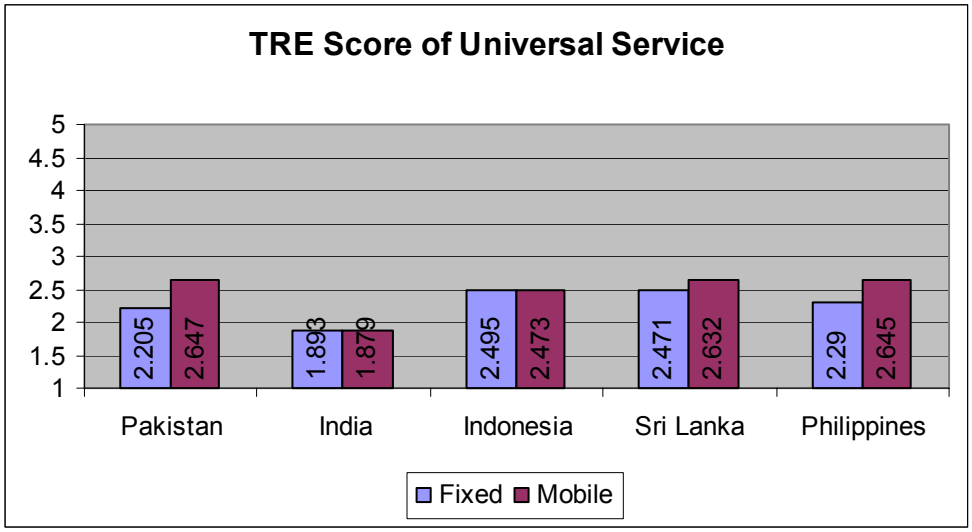
Source: PTA Telecom Quarterly Review, March 2007

In the fixed-line telephony, PTCL enjoys complete monopoly with a market share of 98%. Recently, (September 2007) PTA has invited applications for long distance international (LDI) and local licenses (LL) for services to be provided in the Azad Jumma and Kashmir, and Northern Areas of Pakistan on an open and unrestricted basis. To encourage companies to apply, the application processing fee and initial license fee are drastically reduced to US$100, and US$2000, respectively.

One explanation for the low TRE score for regulation of anticompetitive practices is that it is only in 2006 that the Pakistan Telecommunications Act was amended to grant the PTA the power to regulate anti-competitive practices of the telecom licensees. The rules to regulate the anti-competitive practices of telecom licensee are still to be made by the PTA. Prior to granting this power to PTA, it was within the purview of Monopoly Control Authority (MCA) of Pakistan to check unfair trade practices in the economy. In the absence of formal complaint to the MCA to investigate the anticompetitive conduct of telecos, MCA is somewhat dormant in actively curbing anti-competitive practices on its own.

F. Universal Service Obligation

Figure 25



Section 4(d) of the 1996 Act requires of the Authority to "promote the availability of a wide range of high quality, efficient, cost effective and competitive telecommunication services throughout Pakistan." Making services available throughout the country and are also affordable is technically known as "universal service." The requirement of universal service obligation is echoed in De-regulation, and Mobile Cellular policies. Section 3 of the De-regulation Policy stipulates its objectives as follows:

a. Increase service choice for customers of telecommunication services at competitive and affordable rates;
b. Promote infrastructure development, especially infrastructure that will increase teledensity and the spread of telecommunication services in all market segments (including voice, data and cellular etc);
c. . . .
d. . . .
e. Accelerate expansion of telecommunication infrastructure to extend telecommunication services to un-served and under-served areas.

Similarly, the Mobile Cellular Policy stressed on promoting universal service in Para 8 as follows:

8 Universal Service & Access Promotion Contribution

> Mobile licensee shall pay a USF Charge limited to 1.5% of gross revenue minus inter-operator and related PTA / FAB mandated payments as determined by the Government.
>
> *The importance of funding telecommunication infrastructure in the rural areas cannot be underestimated for the long-term economic benefit and to avoid a 'digital divide' between rural and urban areas. The establishment of the USF and the allocation of funds to operators is an important factor in accelerating the availability of telecommunication services in rural areas. Mobile operators can play an important role in providing coverage to rural areas in particular where there is no fixed line service. The USF will be financed by revenues collected from all telecommunication licensees through a universal service fund charge (the "USF Charge"). The USF may also receive contributions from the Government, and also funding from international or bilateral development agencies.*

The De-regulation Policy laid down the basics for Access Promotion Contribution (APC) – contribution by service providers that will go in the Universal Service Fund and will be used for rolling out fixed-line/WLL infrastructure in the un/under-served areas. Under-served areas are the ones where a potential subscriber requests a service, but the request cannot be satisfied immediately due to capacity constraints. In other words, there is significant waiting list. The scheme for Access Promotion Contribution was fleshed out in detail in the Access Promotion Rules of 2004 and Access Promotion Regulations of 2005.

APC is formed on the premise that net incoming international traffic generates a financial premium over the cost of conveying and terminating the traffic into Pakistan. A reasonable portion of this premium is to be used for infrastructure expansion. Funds from APC will be available to LDI and LL licensees and not to cellular operators. For effective implementation of the APC, all international traffic agreements will be regulated by the PTA. Traffic agreement will be negotiated on "*one country one rate" principle*, and symmetry between incoming and outgoing international termination rates.

The Ministry of Information and Technology (MoIT) issued the Universal Service Fund Policy in 2005. In terms of the Policy, the primary goals for Universal Service are:

- To make available and affordable voice telephony and data services suitable for Internet access, to progressively greater proportions of the Pakistan population at their home locations.
- Hence, to provide conducive/attractive conditions in which teledensity can grow.
- To kick-start the broadband and ICT markets, facilitating e-services.

MoIT has set the following nation-wide targets for the end of year 2010:

- 85% of country population to have coverage and therefore access to service if desired
- Teledensity: 5% in rural areas (fixed and/or mobile)
- Broadband: 1% penetration (nation-wide average)

- Telecentres: preferably one for every 5,000 people, but at least one for every 10,000 people in USF contract areas.

And by the end of year 2015:

- 95% of country population to have coverage and therefore access to service if desired

The US Fund will be administered by an independent not for profit company with a Board of Directors representing government, consumers and the industry. The company has been formed, however the executive staff, including the CEO still needs to be hired as of the writing of this report (June, 07).

As can be seen from the number of policies and legal instruments mentioned above, one cannot over-stress the need for promoting Universal Service more. However, despite all these legal machinery in place, not a single penny has been distributed from the USF to date.

However, universal service obligation is placed by the PTA on the SMPs. For example, PTCL in obliged to install exchanges and lines in rural and under-served area at the same annual average rate as it achieved during its exclusive license period, and in no case less than 83,000 lines per annum until the end of 2008.

Table 6

Fixed Line Teledensity: Urban vs. Rural

	Area	2003-04	2004-05	2005-06
	Rural	1.30	1.40	1.40
	Urban	6.70	7.80	8.00
Punjab	Total	**3.00**	**3.50**	**3.40**
	Rural	2.00	2.20	2.20
	Urban	5.10	5.90	6.00
Sindh	Total	**3.50**	**4.00**	**4.00**
	Rural	0.80	0.90	0.90
	Urban	11.00	13.10	11.60
NWFP	Total	**2.30**	**2.70**	**2.70**
	Rural	0.40	0.50	0.40
	Urban	5.20	6.40	6.20
Balochistan	Total	1.50	1.90	1.80
	Rural	1.30	1.40	1.40
	Urban	6.40	7.50	7.60
Pakistan	Total	**3.00**	**3.40**	**3.40**

Source: PTA Annual Report 2006

Despite the commendable growth of telecommunications in Pakistan, it should be kept in mind that 70% of Pakistan's total population resides in rural areas. And the total teledensity in rural area is a little less than 2%.[55] "According to the World Bank, 80 million people in Pakistan have no access to telecommunication services due to uneven spread of population across the four provinces. While 41 percent of villages in the Punjab, the most densely populated province, are without telecommunications

[55] http://www.pakistan.gov.pk/ministries/NewsInfo.jsp?MinID=7&cPath=78&div=itandtelecom&file=031006.xml&path=ministries/moit/

infrastructure, 94 percent of villages in Balochistan, the least densely populated province, are also suffering from the same fate."[56]

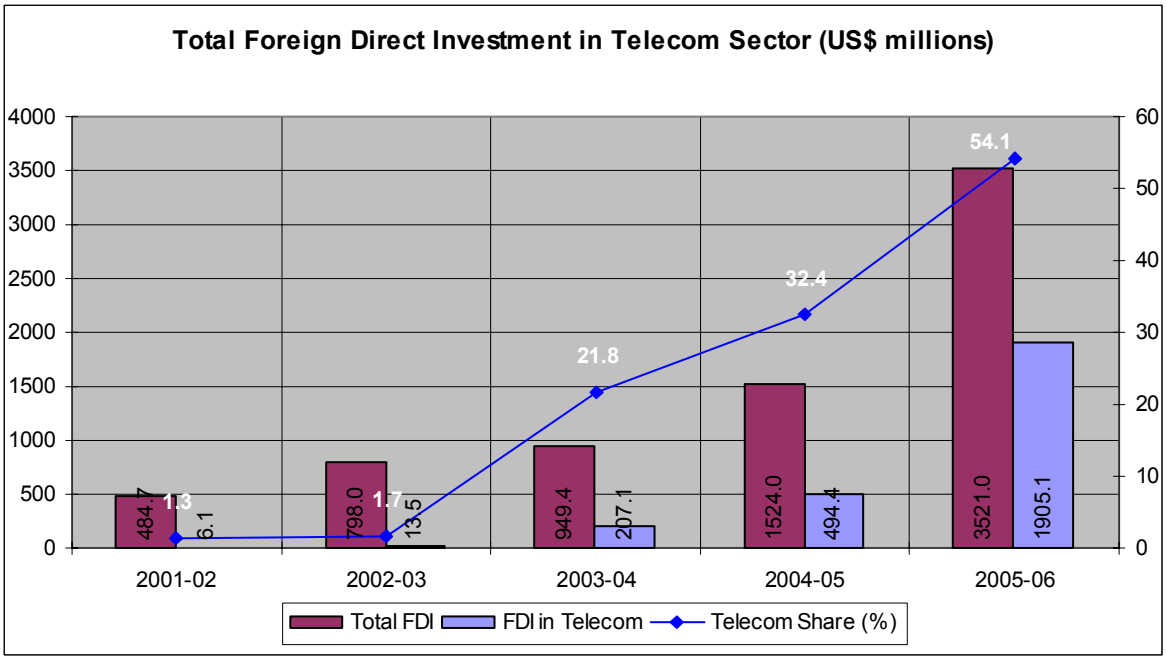
The rapid rise in the mobile cellular penetrations, mostly concentrated in the urban areas, is widening the rural-urban divide. The WLL, for the problems mentioned above[57], have failed to meet the requirements of the rural areas. The USF is aimed to bridge the rural-urban divide. It is hoped that the rural teledensity will increase to 5%by the year 2010.

[56] http://english.people.com.cn/200608/01/eng20060801_288892.html
[57] III.A. page 21

IV. Moving Towards an Information Economy

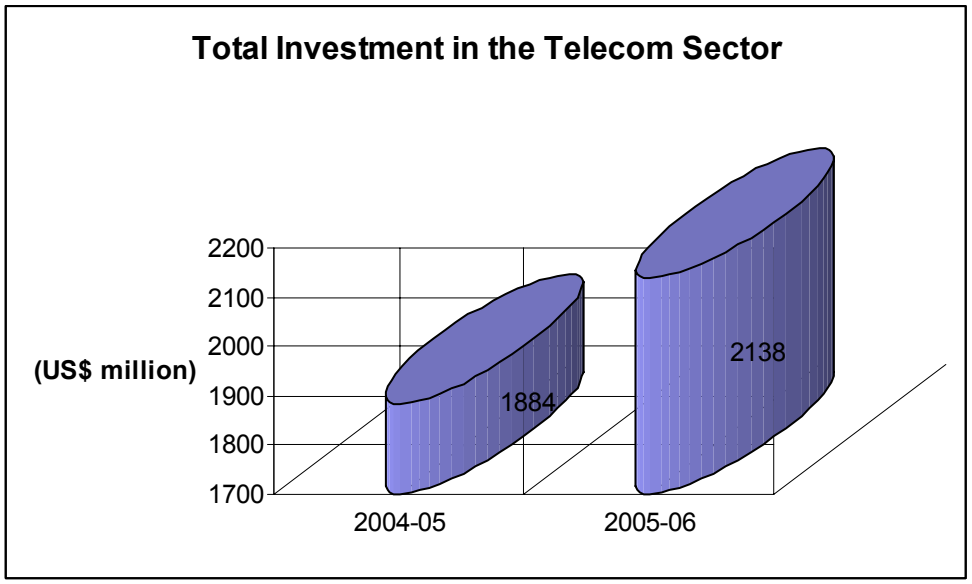
The liberalization of telecommunications industry has attracted sizeable foreign direct investment (FDI) in the country.

Figure 26



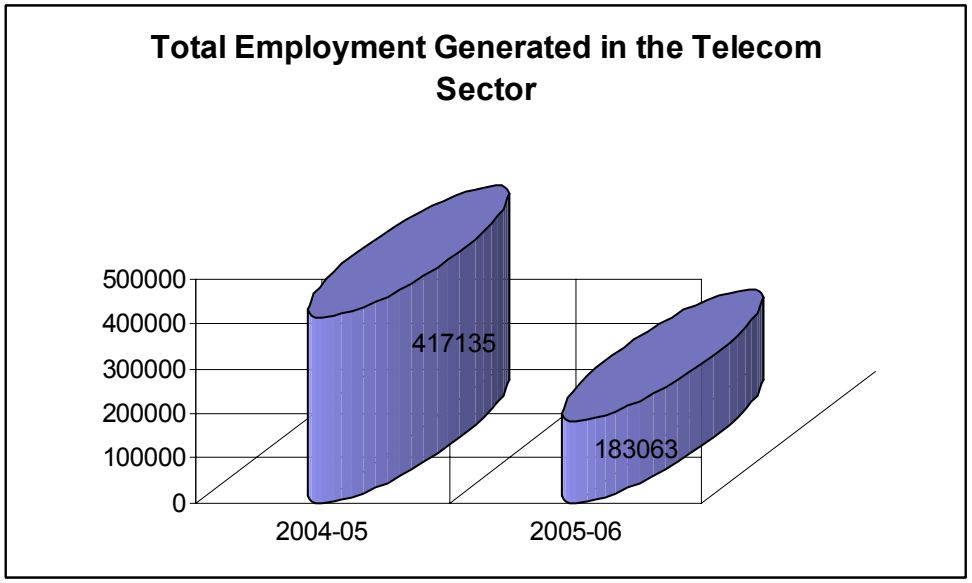
Post deregulation the growth of FDI in the telecom sector has been phenomenal, contributing 54.11% to the total FDI of $3521 million. Because of the volume of business, telecom has been granted an **Industry** status by the government of Pakistan.

Figure 27



The consistent growth in investment has resulted in better infrastructure and generated employment in the sector.

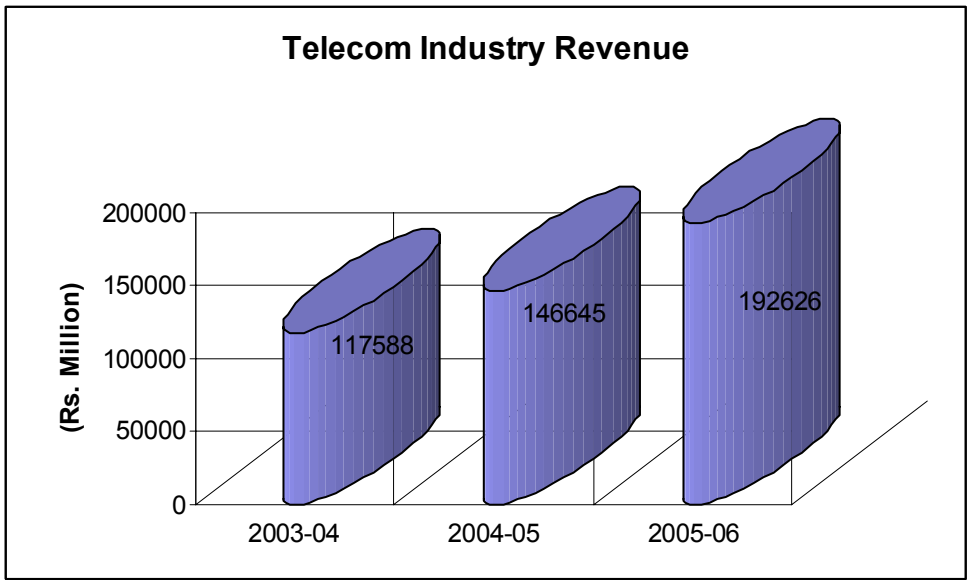
Figure 28



In 2005, Telenor and Warid launched their operations and thus investment in the sector resulted in significant job creation; figures for the year 2005-06 indicate employment that was created in addition to those created in the previous year. However, it may be clarified that while there was 21.7 percent points increase in the FDI from 2004-05 to 2005-06, the corresponding low figures of employment generated are because of the fact that 62% of the FDI for the year 2005-06 were privatization proceeds of PTCL. The figures above indicate the direct & indirect employment generated each year.

Telecom sector is still attracting large investments and is thus contributing in the economy through creation of employment.

Figure 29



There has been an 84% growth in the total mobile revenues in 2005-06 as compared to the last year.

Figure 30

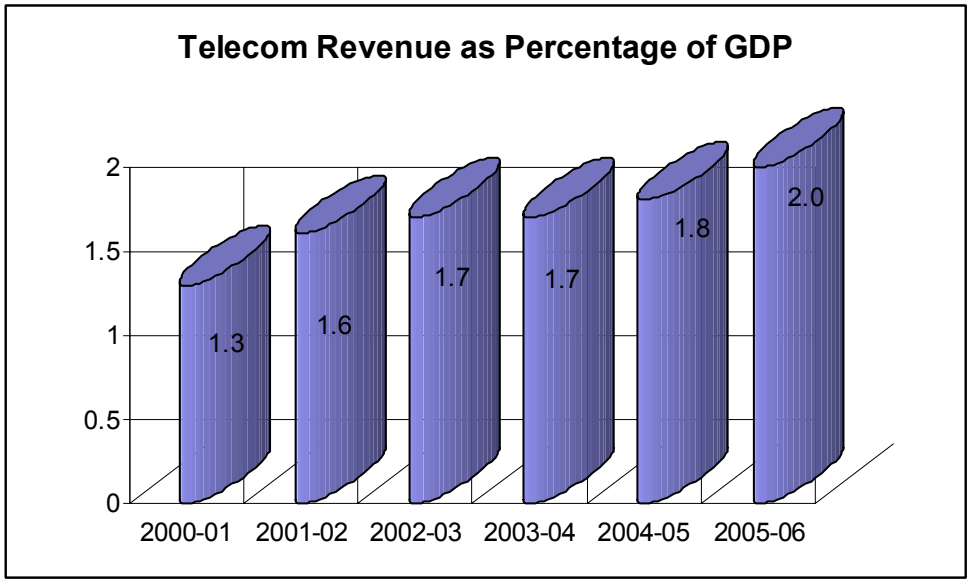
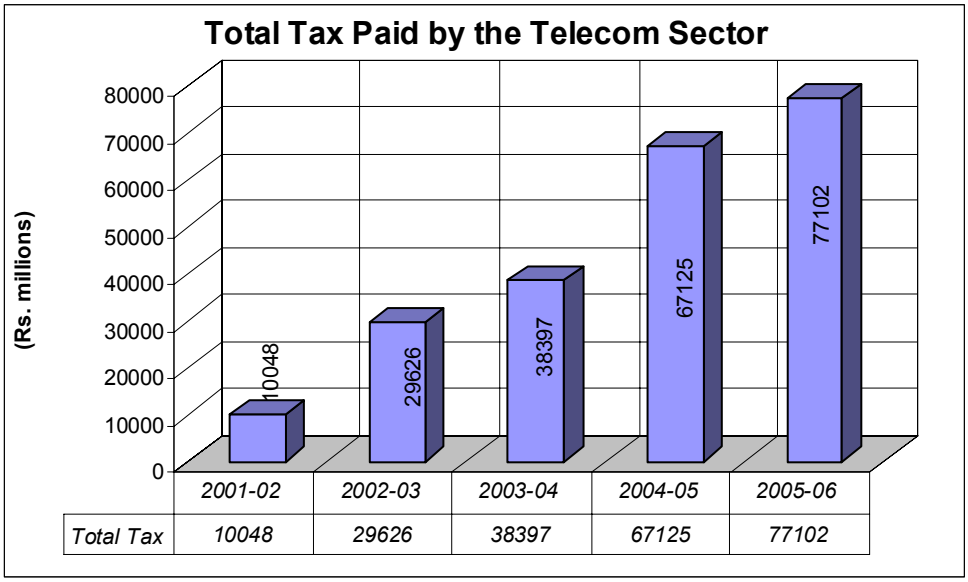


Figure 31



Telecom sector has contributed Rs. 77.1 billion to the national exchequer in the year 2005-06. This figure is 15% higher than that of last year. The contribution to the government coffers is increased by 100% since the liberalization took place in 2003-04. The number and the rate of taxes imposed on the telecom sector by the government of Pakistan are much higher than imposed by other countries in the region on the sector. Heavy taxes is one the impediments in potential growth and expansion of the sector.

A. Liberalization of Telecom and It's Impact on ICTs

The use of ICTs and moving the country towards the information economy is directly dependent on the state of telecommunications infrastructure and services. The impact of liberalization of telecommunications in Pakistan can be seen and traced on the use of ICTs in the country. Although the number of internet subscribers has grown five time in the last six year, the penetration is still however very low. As of 2006, the internet subscribers per 100 inhabitants are only 1.26% .

Figure 32

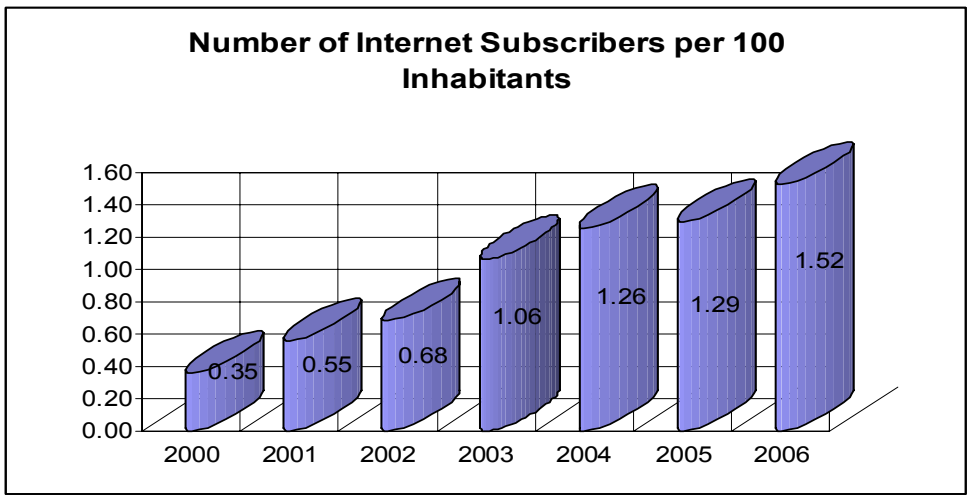
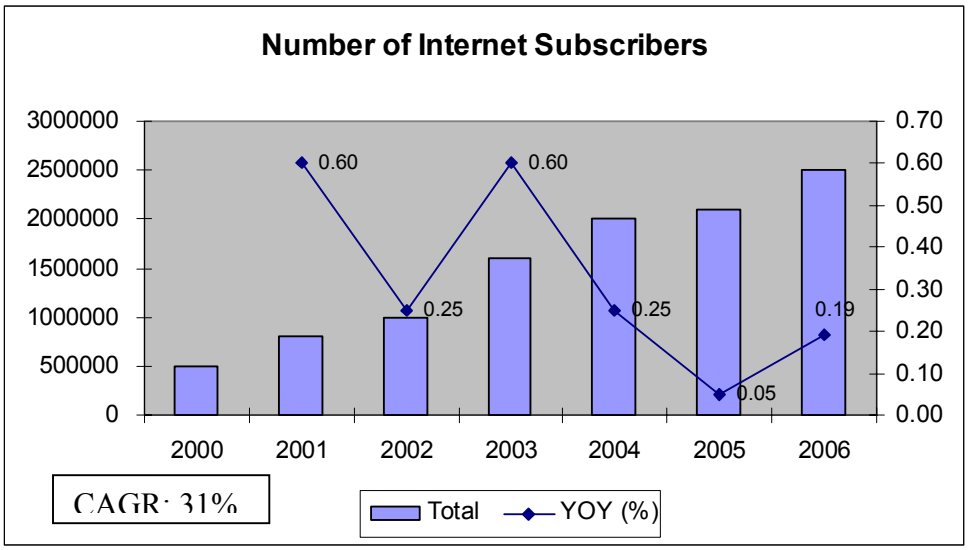


Figure 33



The year-on-year growth in internet subscriber base has displayed an almost cyclic performance standing at 0.19% in 2006, while cumulative growth came up to 31%. This trend is a major indication that there is major digital divide within the country, which is to be addressed through making efficient infrastructure available to under/un-developed areas.

On the other hand, the introduction of broadband internet services has attracted a good share of subscribers. The year-on-year growth sharply rose in 2004 immediately after introduction of the new technologies, but could not keep up due to very high tariffs and inadequate access to infrastructure. DSL subscribers are a major chunk of broadband subscribers, who face problems related with the use of copper-wire. Thus, the use of copper-wire poses serious challenges to the adoption and spread of these services.

Figure 34

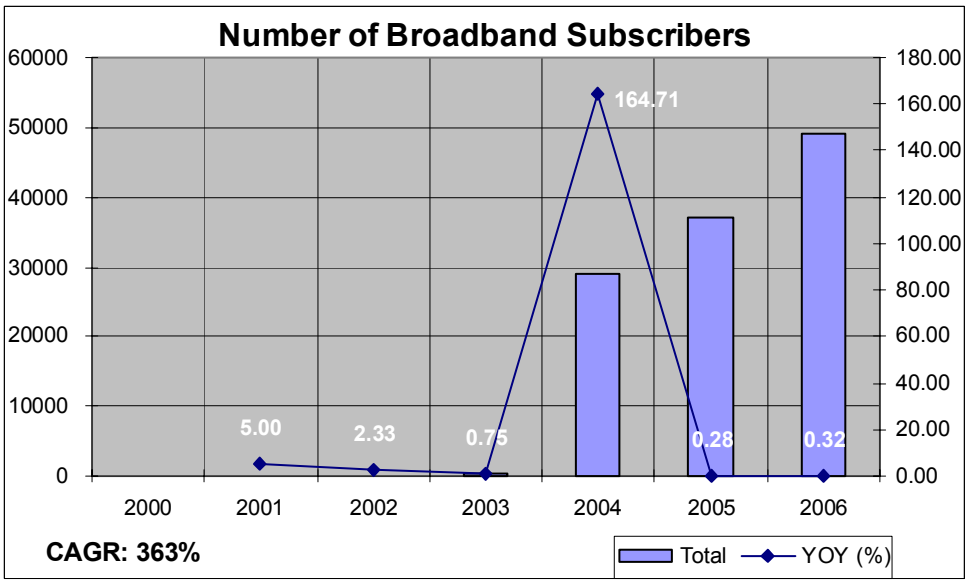
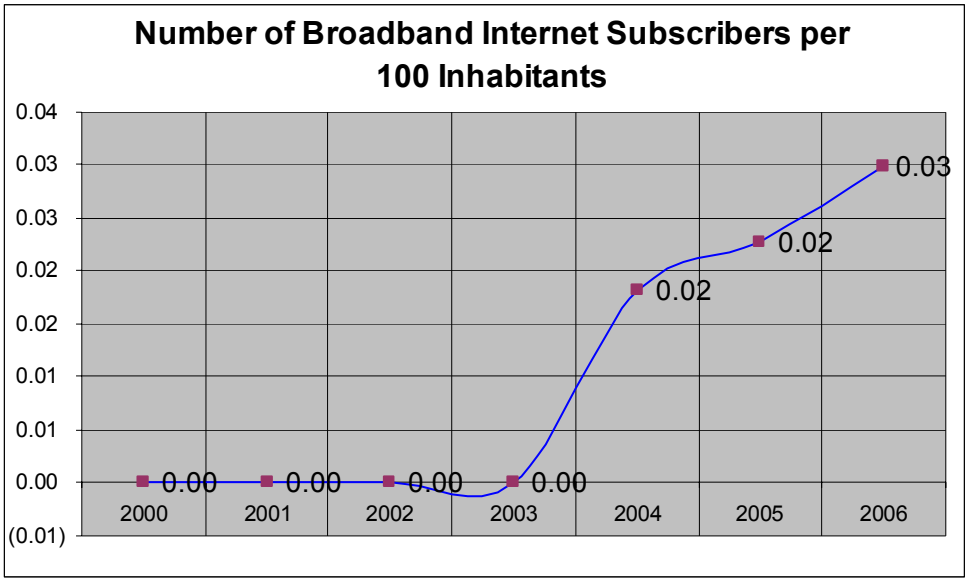


Figure 35



The low penetration of broadband services could be attributed to the late introduction of services in Pakistan. Broadband Policy was introduced in 2004.. For this very purpose, PTA has lowered the tariffs for broadband service providers. Currently, the telecom infrastructure in Pakistan is considered an impediment to expansion of such technology, since the current copper wire technology for fixed telephone lines is often faulty. Digital Subscriber Line (DSL), which is considered as a part of broadband service, is neither available nor efficient for all cities and/or areas.

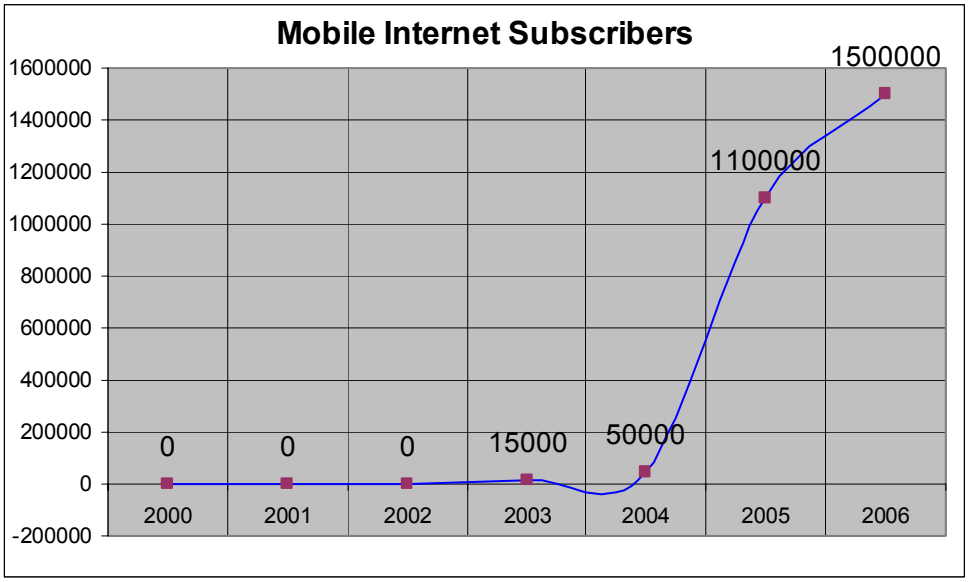
PTCL is required to provide appropriate infrastructure that would ease the installation, spread and usage of such technology.[58] However, very few interconnection agreements have been signed between PTCL and the service providers and even in presence of them, there are huge concerns of *quality of service* that need to be addressed by PTA on complaints of the customers. Although, this is a part of Interconnection Dispute Resolution Regulation (IDR) 2004, very few disputes have been brought before and settled by the PTA. Moreover, cable broadband service providers also rely on the fibre-optic cable infrastructure, which requires large investment. The lack of fibre-optic infrastructure discourages investment in the cable broadband technology.

Currently, broadband services are limited to cities and are not economical for an average home consumer, thus making its usage very low. Wateen Telecom, a UAE entity, has undertaken to lay out a country-wide fibre-optic infrastructure by developing a backbone for its third generation services. With the laying fiber-optic backbone, it is hoped that broadband access will become cheaper and thus accessible. As present the price of broadband services in Pakistan is 1600 times higher than that in South Korea. [59]

[58] National IT Policy, 2000

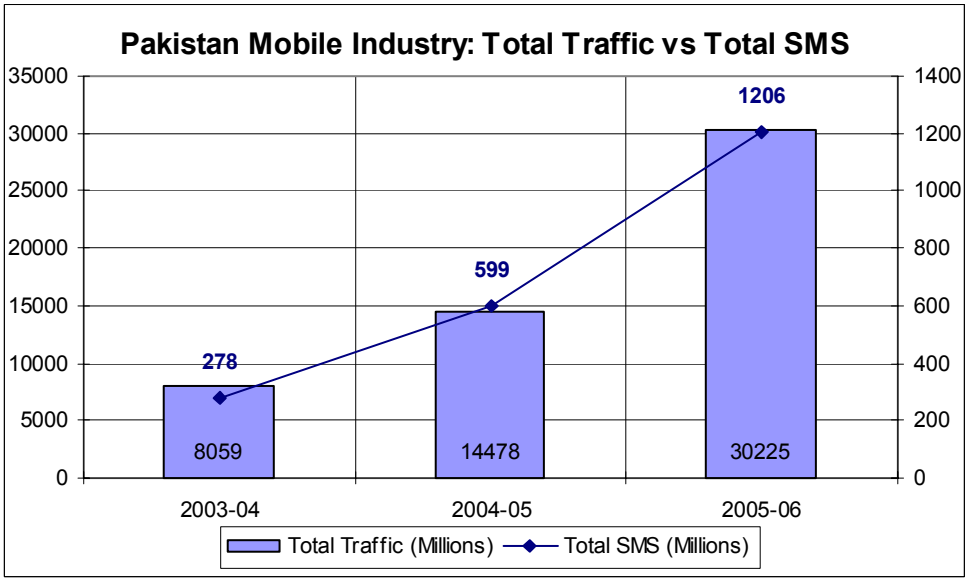
[59] Broadband Policy for Pakistan 2004, Ministry of Information Technology (IT & Telecom Division), Government of Pakistan

Figure 36



Value added services such as GPRS/MMS, EDGE and Blackberry corporate mobile email solution have been introduced by the mobile operators' post 2003, which have contributed to the rapid growth of mobile internet subscriber-base.

Figure 37



SMS, a value added service, has displayed a nearly 100% growth in the last one year due to launch of free on-net text services by Telenor.

V. Conclusions and Challenges ahead

The *success* story of Pakistan's telecom revolution can be attributed to progressive regulatory reform undertaken by the government of Pakistan. Most important of which is market entry regulation. Through an unbundled licensing regime the regulator ensured a contestable market for all types of telecom services. To encourage entry in the fixed line services, the monopoly rights enjoyed by the incumbent PTCL were terminated in 2007. The unbundled licensing regime has also facilitated the development of ICT sector in the country. Currently, the licenses being issued by the PTA are: Local Loop (LL), Long Distance and International (LDI) and Wireless Local Loop (WLL), and Class Value Added Services (CVAS).

Allowing market entry alone will not be sufficient, if it is not coupled with effective and equitable interconnection regime. While respecting the freedom to contract of the market-players, so that telecom operators could negotiate among themselves the terms of interconnection, PTA has ensured that "essential facilities" are not abused by the dominant market players by requiring an operator who attains significant market power to produce a reference interconnection offer (RIO) detailing the services and tariffs they provide to other licensed operators.

The effort to maintain level-playing field by requiring RIOs is further strengthened by PTA by laying down an efficient and fair dispute settlement mechanism. The efficacy of the dispute settlement by PTA can be gauged from the fact that very few appeals are preferred to the provincial high courts against its orders.

Advances in technology, especially wireless communications technologies, have a major role in the spread of telecommunications. Crucial to the spread of wireless technology such that it can serve large sections of the society is the process by which the radio frequency spectrum is allocated. Many countries seem to be still grappling with issues of spectrum allocation. In India, *e*.g., lack of spectrum and its inefficient allocation is constraining the growth of the sector. However, in Pakistan the legal requirement of processing applications within a period of 30 days, coupled with technological capability to assess potential interferences with other operators have allowed Frequency Allocation Board (FAB) to clear applications for radio spectrum (RS) expeditiously. So much as, in the year 2004-05, a total of 103 licenses of WLL and CVAS using RS were issued. FAB is currently preparing a Spectrum plan to allow Wi-Fi operators in the region. FAB is, however, advised not to burden the WiFi licensees by requiring them to register every hotspot, just like Sri Lanka did.

One of the sought-after outcomes of competition is lower prices, both for the service and equipment. Pakistan has indeed reaped the fruit of lower prices off the tree of competition. The freedom to set prices has allowed the competitors to slash their margins in order to increase their subscriber-base, thus resulting in lower prices for the consumers. As a protection against abuse of dominant position by engaging in predatory pricing, the law empowered the PTA to set tariffs of the operators who achieved the status of significant market power. Pakistan now claims to have the lowest mobile tariffs in the world.[60] Mobile subscriber-base has increased manifolds to 5.5 million in few

[60] Speech by Chairman, PTA. June 14, 2007.

years. Prepaid cards costing less than US $0.50 per month, rather than monthly subscription fees, meant that owning a cell phone was no longer beyond the reach of the masses. Handset prices fell from over $300 to under a $100.[61] Low tariffs in the fixed-line telephony have facilitated the growth of ICTs in the country.

Another important step, and first in the region, taken by the PTA to facilitate competition is the implementation of Mobile Number Portability Regulation 2005, (MNP) which became effective as of March 27, 2007. With MNP in place, cell phone users could keep their phone numbers even after their six-month, prepaid card expired and can switch other service providers without changing the number.[62]

All these steps to further competition in the sector have lead to increased foreign direct investment, and generated employment in the country.[63] Additionally, PTA has implemented the regulation and handled the matters professionally and efficiently, such that there are few appeals against the working of the Authority.

However, despite these success points there are some stumbling blocks in making Pakistan an information economy. High taxes on the telecommunication service providers and consumers are one such obstacle. Corporate taxes including General Sales Tax (GST) and Withholding Tax are significantly higher in Pakistan than in other countries. A comparison of the Sales Tax and Withholding Tax on mobile sector in Pakistan with other regional countries shows that Pakistan's mobile sector is paying 21.5 % higher than Malaysia, 16.3% higher than India, and 8.6% higher than Sri Lanka.[64]

Another important factor for sustaining future growth will be increasing the level of competition both nationally and globally. Additionally, the, under the access promotion contribution rules, requiring *one country one rate* for negotiating international tariffs runs afoul of international competition law principles, and the government is advised to do away with that principle.

The major challenge that lies ahead for the government is to bridge the rural-urban and digital divide. Seventy per cent of Pakistan's total population resides in rural areas, where the teledensity is a little less than 2%.[65] "According to the World Bank, 80 million people in Pakistan have no access to telecommunication services due to uneven spread of population across the four provinces. While 41 percent of villages in the Punjab, the most densely populated province, are without telecommunications infrastructure, 94 percent of villages in Balochistan, the least densely populated province, are also suffering from the same fate."[66] The key to meet that challenge is the successful implementation of the Universal service Fund, which has the potential and the home to improve teledensity in rural areas and can bridge the digital divide within the country. Till date no disbursements have been made from the fund, showing the lack of political will on the part of the policymaker to address the issue of rural-urban divide. Lessons may be learned from countries who have successfully implemented universal service funds, in order to achieve the objective of improving rural telephony.

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[61] UNDP-ADIDP, 2004.

[62] PTA, Telecom Quarterly Review, March 2007, Page 5.

[63] See Figure 28 above.

[64] See Figure 21 above.

[65] http://www.pakistan.gov.pk/ministries/NewsInfo.jsp?MinID=7&cPath=78&div=itandtelecom&file=031006.xml&path=ministries/moit/

[66] http://english.people.com.cn/200608/01/eng20060801_288892.html

Annexures

Annex-A: Summary of Legal Instruments

Summary of Legislative Reforms Undertaken in Pakistan since 2000 and Their Impact on Different Dimension of Regulatory Environment

Policy Objective	*Legal Instruments / Policy Documents*	*Regulatory Dimension affected*
1. Opened-up fixed telecommunications to competition 2. Increase choice for customers at competitive and affordable rates 3. Promote infrastructure development – Teledensity 4. Increase private investment - Encourage Local Manufacturing - Encourage Service Industry 5. Expansion of telecom infrastructure to un/under served areas	***Telecom Deregulation Policy 2003***	▪ Market Entry ▪ Interconnection ▪ Universal Service ▪ Regulation of Anti-competitive practices ▪ Scarce Resources
Allows consumers to switch operators retaining their number	***Mobile Number Portability Regulation 2005***	▪ Market Entry ▪ Regulation of Anti-competitive practices
Access of incumbent Network	***Interconnect Dispute Settlement Regulation, 2004***	▪ Interconnection ▪ Regulation of Anti-competitive practices
	Fixed Line Tariff Regulation, 2004	▪ Tariffs
1. Spreading of an affordable, 'always on,' broadband high speed internet service in the corporate and residential sectors across Pakistan. 2. Encourage the entry and growth of new service providers while stimulating the growth	***The Broadband policy, 2004***	▪ Market Entry ▪ Universal Service

of the existing ones at the same time. 3. Encourage private sector investment in local content generation and broadband service provision.		
1. promote efficient use of radio spectrum; 2. increase choices for customers of cellular mobile services at competitive and affordable price; 3. encourage private investment in the cellular mobile sector; 4. recognize the rights and obligations of mobile cellular operators; 5. encourage fair competition amongst mobile and fixed line operators; and 6. establish an effective and well defined regulatory regime that is consistent with international best practices.	***Mobile Cellular Policy, 2004***	▪ Market Entry ▪ Access to Scarce Resources ▪ Universal Service
The fund would contribute to an enabling ICT environment and human resource development by 1. increasing industry demand and 2. building a knowledge-based ICT industry for value added products and services and 3. facilitate research.	***National R&D Fund Policy (Legal, Administrative & Financial Structure) 2006***	▪ Universal Service
To safeguard the interest of the consumers	***Protection of Telecom Consumers Regulations, 2006***	▪ Regulation of Anti-competitive practices (consumer protection is part of competition agencies' mandate).

Annex-B: TRE Questionnaire

Telecom Regulatory Environment Assessment

- The respondents are kindly requested to make their assessments of the telecom regulatory environment (TRE) for the period between June 2005-June 2006 for the fixed and mobile telecommunications sector on the scale provided. This should take less than 5 minutes of your time.
- A fact-sheet of key events in the Telecom Regulatory Environment is attached for your reference for the period June 2005-June 2006.
- The dimensions used in this questionnaire are broadly based on the WTO Regulatory Reference Paper and are briefly described below.

Dimension	Aspects Covered
Market Entry	Transparency of licensing, Applicants should know the terms, conditions, criteria and length of time needed to reach a decision on their application, License conditions, exclusivity issues
Scarce Resources	Timely, transparent and non-discriminatory access to spectrum allocation, numbering and rights of way; Frequency allocation, Telephone no allocation, Site rights
Interconnection	Interconnection with a major operator should be ensured at any technically feasible point in the network, quality of interconnection comparable to own like services offered, reasonable charges for interconnection rates, interconnection be unbundled, interconnection offered without delay, Sharing of incoming and outgoing IDD revenue, Payment for cost of interconnection links and switch interface, Payment for cost of technical disruption of interconnection
Tariff Regulation	Regulation of tariffs or pricing of services; tariffs or pricing charged should ensure that the dominant carrier does not abuse its market position or adopt uncompetitive pricing
Regulation of Anti Competitive Practices-	Anti-competitive cross subsidization, using information obtained from competitors with anti-competitive results, not making available to competitors on a timely basis technical information about essential facilities and commercially relevant information, excessive prices, price discrimination and predatory low pricing, refusal to deal, vertical restraints, cross subsidies, technical disruption of interconnection , sharing of towers and facilities by parent company and subsidiaries in different segments of the market
Universal Service Obligation (USO)	Presence of a USO whether as a fund or as a program; its effectiveness in making services available to lower income groups; administration of the universal service program/fund in a transparent, non-discriminatory and competitively neutral manner and are not more burdensome than necessary for the kind of universal service defined by the policymakers.

Key Events in the Telecom Regulatory Environment in PAKISTAN during 2005-2006

Year 2005:

- Implementation of National Telephony Numbering, under Number Allocation and Administration Regulation. Geographical codes were assigned to both customers and carriers for voice and data services.
- Implementation of Mobile Number Portability Regulation. Under its auspices *interconnect agreements* were made compulsory for operators, allowing consumers the facility of number portability across operator networks.
- Implementation of Access Promotion Contribution (APC) Regulation. The LDI operators have been included in the gambit of this regulation, by conforming them to accounting rates such as 'one country one rate' principle.
- Ordinance No. XVI, 2005 of the Pakistan Telecommunication (Re-organization) Act 1996 officially absorbed the provisions and conditions of Universal Service Fund (USF) and its contributions from APC. This ordinance maybe called a "SPECIAL FUND" ordinance that states USF and R&D (Research and Development) Fund as integral to promotion of communication services.
- Mobilink issued show cause notice due to the abuse of its dominant position in the market and interconnect agreements, under the Significant Market Power Regulation.

Year 2006:

- Liberalization policy saw the handing over of Etisalat; a UAE telecom, 26% stake in PTCL
- The government allowed 100% foreign equity in most telecommunications services, including electronic information services, pre-paid telephone services, paging services, and voice mail services
- Research and Development Fund Operations Manual has been rolled out with its vision and policy 2006, with the support of NU consulting (FAST), Pakistan and MIMOS Berhard, Malaysia
- The R&D fund will be operated by a R&D company managed under a Legal, Administrative and Financial Structure (LAFS). Pursuant to this, Research and Development Fund Administration Rules, 2006, have been enacted with immediate enforcement
- Introduction of draft for Protection of Telecom Consumers Regulations, 2006. It is in pursuance of section 4 (c) and section 6(f) of Pakistan Telecommunication (Re-organization) Act 1996; under which, it is the function of PTA to safeguard the interest of the consumers
- All financial institutions bound to achieve certain degree of automation of their services by the end of this year
- Liberalization attracts foreign investment. Wateen Telecom, part of Warid Telecom International, to plan, design and deploy a nationwide wireless

broadband voice and data network in Pakistan, with initial deployment to be completed by the second half of 2006

- Government seeks E-Government Readiness and delivering E-government objectives under a legal framework by the end of 2006

Please **CIRCLE** the number that best represents regulatory performance for each dimension. The *lower* number representing **Highly Ineffective** and the *higher* number represent **Highly Effective**.

FIXED SECTOR: REGULATORY ENVIRONMENT

Period June 2005-June 2006

DIMENSIONS

Market Entry	**Highly ineffective**	1	2	3	4	5	**Highly effective**
Access to Scarce Resources	**Highly ineffective**	1	2	3	4	5	**Highly effective**
Interconnection	**Highly ineffective**	1	2	3	4	5	**Highly effective**
Tariff Regulation	**Highly ineffective**	1	2	3	4	5	**Highly effective**
Regulation of Anti-competitive Practices	**Highly ineffective**	1	2	3	4	5	**Highly effective**
Universal Service Obligation (USO)	**Highly ineffective**	1	2	3	4	5	**Highly effective**

Please **CIRCLE** the number that best represents regulatory performance for each dimension. The *lower* number representing **Highly Ineffective** and the *higher* number represent **Highly Effective**.

MOBILE SECTOR: REGULATORY ENVIRONMENT

Period June 2005-June 2006

DIMENSIONS

Market Entry	**Highly ineffective**	1	2	3	4	5 **Highly effective**
Access to Scarce Resources	**Highly ineffective**	1	2	3	4	5 **Highly effective**
Interconnection	**Highly ineffective**	1	2	3	4	5 **Highly effective**
Tariff Regulation	**Highly ineffective**	1	2	3	4	5 **Highly effective**
Regulation of Anti-competitive Practices	**Highly ineffective**	1	2	3	4	5 **Highly effective**
Universal Service Obligation (USO)	**Highly ineffective**	1	2	3	4	5 **Highly effective**

If you have any specific comments on the Telecom Regulatory Environment in your country, please write them below:

Comments:

Optional Information:

Name:_____
Designation:_____
Company:_____

Annex-C: Basic Demographic Indicators

	Pakistan	Philippines	India	Sri Lanka
Population	165 million	87 million	1,095 million	19.6 million
GNI per capita (2005) USD Atlas	690	1,300	720	1,160
GNI per capita (2005) USD PPP	2350	5,300	3,460	4,520
Population below Poverty Line	32% (est. 2001)	40% (est. 2001)	25% (est. 2001)	23% (est. 2005)
Fixed Tele-density	4.16	4.00	4.58	7.5
Mobile Tele-Density	25.22	41.3	8.82	21.5
Internet Users	7.5 million	7.8 million	50.6 million	0.3 million

Sources: PTA, TRAI, NTC and TRC websites. Data as of September 2006; actual numbers may be higher.