सत्यमेव जयते

# A journey towards excellence in Telecommunications

2007

2007

1997

**Commitment to provide
World Class Qualilty Service**

# Telecom Regulatory Authority of India

**(ISO 9001:2000 Certified)**

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On completion of its 10 years, the Telecom Regulatory Authority of India is privileged to present the highlights of the key contribution of the Authority and an overview of growth and developments in the telecom sector of India.

Progressive policies of the Government, major positive regulatory measures put in place by the Telecom Regulatory Authority of India (TRAI) and entrepreneurial excellence of the service providers have made India's telecom sector, the success story of liberalization.  In response to rapid changes in technology, intense competition and other dynamic changes in the sector supported by the booming economy,  major initiatives from the regulatory authority are on the anvil.

**(Nripendra Misra)**
**Chairman**

New Delhi
Date: 21st September, 2007

*Foreword*

सत्यमेव जयते
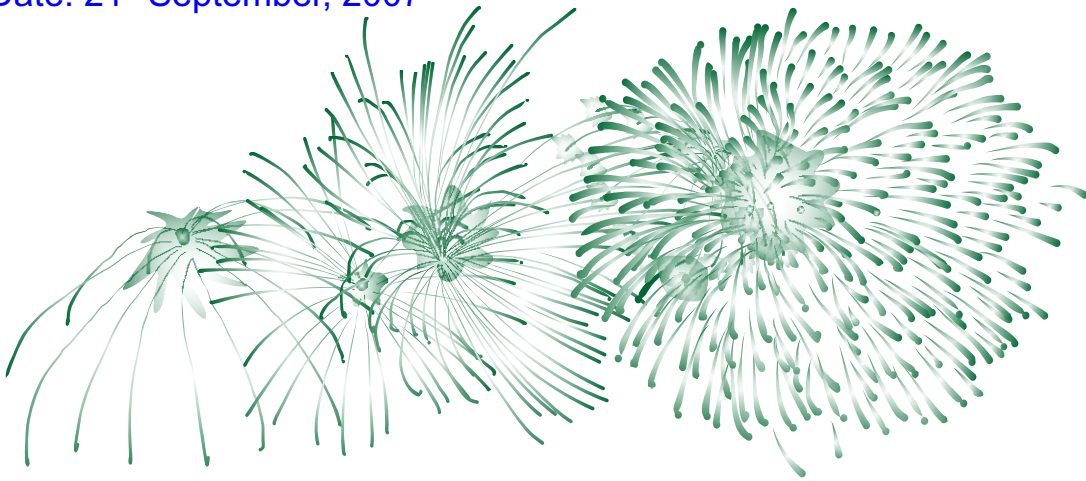
## Scaling New Heights

By discharging various recommendatory and regulatory functions, TRAI has been a harbinger of change and has contributed significantly in the growth of telecom services in terms of increase in the number of service providers, consumer base and vast network of the telecom services across the length and breadth of the country. These measures have resulted in overall benefits to the consumer in terms of choice of services, affordable tariff of telecom services, better quality of services etc, as is evident from the exponential growth in the total number of subscribers of telecom services. Some of the exceptional achievements are mentioned below:

- Telecom sector has shown exponential growth, tele-density, which grew only by 1.92% in 50 years (1948-98), increased by 18% in just 10 years of TRAI's existence.
- Subscriber base in the country is growing by 6 million every month.
- Internet Connection as on 31st March 2007 are 40.57 million as compared to Broadband Policy, 2004 target of 18 million subscribers by end of 2007 and 40 million by the year ending 2010.
- India now has the fourth largest telecom network after China, USA and Russia with lowest tariff.
- Telecom tariffs have fallen considerably and these are no longer regulated barring few exceptions. In some tariff plans, long distance calls cost as little as Indian Rupee (INR) 1.0 (about 2 cents) a minute. The telecom sector's revenue has reached a financial size of Rs. 1100 billions Indian Rupee (INR) in 2006-07.
- The EBITDA for 2005-06 was Indian Rupee (INR) 301379 millions against INR 267857 millions for 2004-05 i.e. a growth of 12.5%.
- The Indian Telecom Service industry is contributing 2.71% to the total GDP. Total telecom revenue in year 2005-06 was 867 billions Indian Rupees (INR).
- Regulatory framework issued to cover nearly 300 million cable TV viewers.

# Major achievements during 1997-2007

| Item Name | 1997 | 2002 (As on 31st March) | 2007 |
|---|---|---|---|
| Wireline Subscribers (in Millions) | 14.54 | 38.29 | 40.75 |
| Wireless Subscribers(in Millions) | 0.34 | 6.68 | 165.11 |
| Total No. Of Telephone Subscribers (in Millions) | 14.88 | 44.97 | 205.86 |
| Tele-density (in percentage) | 1.56 | 4.29 | 18.23 |
| Internet Subscribers Wireline +wireless (in Millions) | 0.09 | 3.42 | 40.57 |
| Broadband Subscribers(in Millions) | - | - | 2.33 |
| Per Minute Call Charges (in INR)# Local STD ISD | 16.80 30.00 75.00 | 3.09* 9.8 40.80 | 1.0 2.4 6.40 |
| Minutes of Use (Wireless) (Per subscriber per month) | - | 215 | 471 |
| Average Revenue per User (ARPU) (in INR /sub/month) | - | 811 | 298 |
| Foreign Direct Investment (FDI) in Telecom (in Million INR) | 22328.4 | 95620.8 | 118087.9 (Dec 06) |

*Sept-2003 (after Calling Party Pay ( CPP) was introduced)
#There was incoming call charges in 1997 @ INR 16.80 per minute in peak hours

*Achievement : At a Glance*

The mission of Telecom Regulatory Authority of India (TRAI) is to ensure that the interests of consumers are protected and at the same time to nurture conditions for growth of telecommunications, broadcasting and cable services in a manner and at a pace which will enable India to play a leading role in the emerging global information society. The goals and objectives are focused toward:

- Transparency in decision-making by affording an opportunity to all stakeholders.
- Providing consumer with adequate choice, affordable tariffs and high quality of service.
- Promoting level playing field and fair competition among service providers.
- Access to world class quality telecommunications, broadcasting and cable services.
- Promoting efficiency in operations in all the tiers of the industry.
- Adoption of emerging technologies within the framework of a technology neutral policy.
- Ensuring technical compatibility and effective interconnection between service providers.

transparency

effective interconnection

adequate choice & affordable tariffs

technology neutral

access to world class quality Telecommunication Services

promoting fair competition & level playing field

access to world class quality broadcasting and cable services

The Telecom Regulatory Authority of India (TRAI) was established in the year 1997 by an Act of Parliament viz. Telecom Regulatory Authority of India Act, 1997, to regulate the telecommunication services and to protect the interests of service providers and consumers of telecom services. The Government, through notification dated 9th January, 2004, has brought the broadcasting and cable television services within the ambit of telecommunication services in the coutry. In 2004, TRAI was thus vested with the powers to regulate broadcasting & cable TV services also in the country. The Government continues to be the administrator for the policy and licensing function.

As per the Telecom Regulatory Authority of India Act, 1997 [as amended by TRAI (Amendment) Act, 2000], the Authority shall consist of a Chairperson and not more than two whole-time Members and not more than two part-time Members. The Chairperson and other members of the Authority shall hold office for a term not exceeding three years.

The authority functions with a Secretariat headed by a Secretary and assisted by various divisional heads. The functional divisions of TRAI are as follows:

1. Administration & Personnel Division
2. Broadcasting & Cable Services Division
3. Converged Network Division
4. Economic Division
5. Financial Analysis and Internal Finance & Accounts Division
6. Fixed Network Division
7. Legal Division
8. Mobile Network Division
9. Quality of Service Division
10. Regulatory Enforcement Division

A staff of 160 (as on 31.03.2007) is handling the work in the Secretariat, which performs the tasks assigned to it by the Authority in the discharge of its functions. Wherever necessary, consultants are engaged.

*Regulatory Framework*

**Funding**

TRAI is a statutory body and is wholly funded by grant received from the Consolidated Fund of India.

**Human Resource:**

**i)      Recruitment**

The Authority has constituted its own cadre of officers and staff by way of absorbing the officials who were on deputation to TRAI from various Ministries and Departments.

**ii)     Training**

The TRAI has given utmost importance to its HRD programme with a view to develop expertise and ability of its staff to handle vast amounts of data to monitor the various developments and proposals with respect to tariffs and quality of services standards, conduct and co-ordinate surveys on quality of service issues and other consumer related matters. This initiative has proved to be useful in organising and participating effectively in the consultative process for the Authority, both through the preparation of consultation papers and analysing the feedback and responses received in writing and also during the Open House Discussion meetings, and in developing the policy framework to address the various issues which arise in regulating the telecom sector.

**iii)    Seminar / Workshops**

In order to keep pace with the developments taking place globally, the Authority has deputed members of its staff to various international events, meetings and symposia to keep track of the developments and to gather valuable feedback/ inputs for its own policy formulation.  TRAI's participation in deliberations at international level have not only contributed well to the international efforts being focused on issues, which are currently major regulatory concerns in India but have also helped in keeping the TRAI officials aware of International practices.

**ISO 9001:2000 Certification to TRAI**

TRAI had been awarded ISO 9001:2000 certificate, under Licence No.CRO/QSC /L-8002321, in December, 2004 by Bureau of Indian Standards (BIS) .

The functions of the Telecom Regulatory Authority of India are two-fold, one recommendatory and the other mandatory in nature. As per the provisions of the TRAI Act, 1997 the functions of the Authority shall be ----

**1(a) Discharge its functions which are recommendatory in nature either suo motu or on request from the Government on the following matters, namely:**

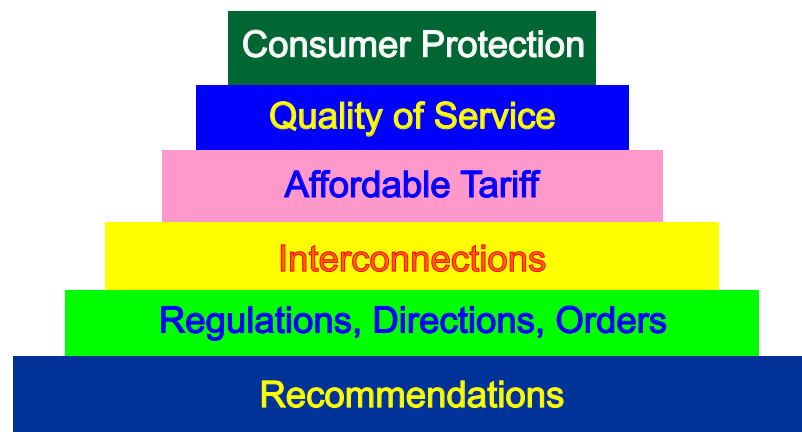(i) need and timing for introduction of new service provider.

(ii) terms and conditions of licence to a service provider.

(Iii) revocation of license for non-compliance of terms and conditions of license.

(iv) measures to facilitate competition and promote efficiency in the operation of telecommunication services so as to facilitate growth in such services.

(v) technological improvement in the services provided by service providers.

(vi) type of equipment to be used by the service provider after inspection of equipment used in the network.

(vii) measures for the development of telecommunication technology and any other matter relatable to telecommunication industry in general.

(viii) Efficient management of available spectrum.

**1(b) Discharge the mandatory functions which include the following, namely:**

(i) ensure compliance of terms and conditions of license.

(Ii) fix the terms and conditions of inter-connectivity between the service providers.

(iii) ensure technical compatibility and effective inter-connection between different service providers.

(iv) regulate arrangement amongst service providers for sharing of revenue from providing telecommunication services.

(v) lay-down the standards of quality of service to be provided by the service providers and ensure the quality of service and conduct the periodical survey of such service provided by the service providers so as to protect interest of the consumers of telecommunication service.

*Functions*

(vi)     lay-down and ensure the time period for providing local and long distance circuits of telecommunications between different service providers.

(vii)    maintain register of inter-connect agreements and of all such other matters as may be provided in the Regulations. Keep the register open for inspection to any member of public on payment of such fee and compliance of such other requirement as may be provided in the regulations.

(viii)   ensure effective compliance of universal service obligation(USO).

(Ix)     notify the rates at which the telecommunication services, within India and outside India shall be provided including rates at which message shall be transmitted to any country outside India.

**1(**c**)**   Levy fees and other charges at such rates and in respect of such services as may be determined by regulations.

**1(d)**   Perform such other functions including such administrative and financial functions as may be entrusted to it by the Central Government or as may be necessary to carry out the provisions of TRAI Act.

**(2)**    From time to time, by order, notify in the Official Gazette the rates at which the telecommunication services within India and outside India shall be provided  including the rates at which messages shall be transmitted to any country outside India**.**

Consumer Protection

Quality of Service

Affordable Tariff

Interconnections

Regulations, Directions, Orders

Recommendations

# Interconnection:

Interconnection regulations, directions and recommendations made are contributing to creation and enhancement of competition in the telecom market and in turn resulted affordability of telecommunications services to the consumers.

✐ Telecommunications Interconnection (Reference Interconnect Offer) Regulations, 2002.

✐ Introduction of Access Deficit Charge (ADC) for sustainability of fixed line operations in a competitive environment.

✐ Introduction of cost based Telecommunication Interconnection Usage Charges in 2003 which paved the path for lower tariff and growth of the sector. These charges envisage an Origination, Transit and Termination charge regime.

✐ Introduction of Mobile Termination Charges which is lowest in the world i.e. Indian Rupees (INR) 0.30 per minute.

✐ Ceiling limit of Indian Rupees (INR) 0.65 per minute on carriage charges paved the way for death of distance and introduction of one India tariffs by operators.

✐ Telecommunication Interconnection (Port Charges) regulations-fixation of cost based port charges for Inter-network connectivity amongst the operators in 2001 and reviewed in 2007, thereby reducing the port charges by about 23 to 29% for various slabs.

✐ Intelligent Network Services in Multi-Operator and Multi-Network Scenario Regulations, 2006.

✐ International telecommunication access to essential facilities at cable landing stations regulations, 2007- addressed the issue of equal ease of access to bottleneck facilities at cable landing stations for accessing international bandwidth capacity on submarine cables. Mandated Cable Landing Station - Reference Interconnect Offer to owner of Cable Landing Stations.

## Tariff:

The tariff for telecom services is under forbearance, except rural telephony, roaming and leased circuits. Service Providers have flexibility to offer any tariff, subject to certain regulatory principles, including Interconnect Usage Charges (IUC) compliance.
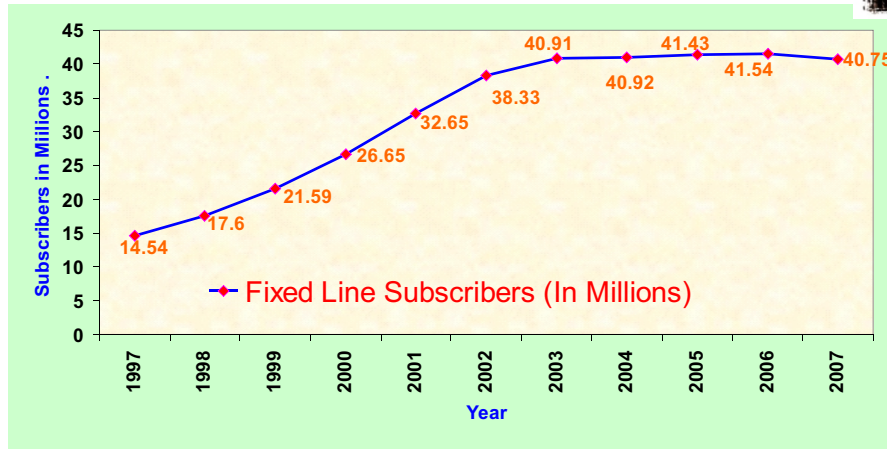
- TRAI issued Telecommunications Tariff Order (TTO) 1999. There has been continuous decline in tariff for various service segments since the Authority started regulating tariff for telecom sector. For example, the local call tariff from mobile phone has declined from a level of Indian Rupees (INR)16.80 per minute (prior to TTO) to be paid both for outgoing and incoming calls to a level of almost Indian Rupee (INR) 1.0 per minute for outgoing calls with incoming calls free.
- Introduction of Calling Party Pays (CPP) regime and cost based interconnection usage charges have led cellular mobile telephone services market in India to be amongst one of the most competitive and fastest growing markets in the world. The intense competition has led India to be on 3rd position in terms of number of mobile subscribers after China and Russia and number one in terms of net addition of mobile subscribers per month. In terms of minutes of usage in mobile segment, India stands at 2nd position after USA.
- Significant reduction in Domestic Leased Lines (DLC) and International Private Leased Lines (IPLC) tariffs to make them cost based.
- Significant reduction in International, Domestic long distance Calls charges.
- Roaming charges rationalized and ceiling limit specified.
- Reduction in tariffs for mobile telephony has made the connectivity affordable to the common man and this has led to steep increase in the overall tele-density.
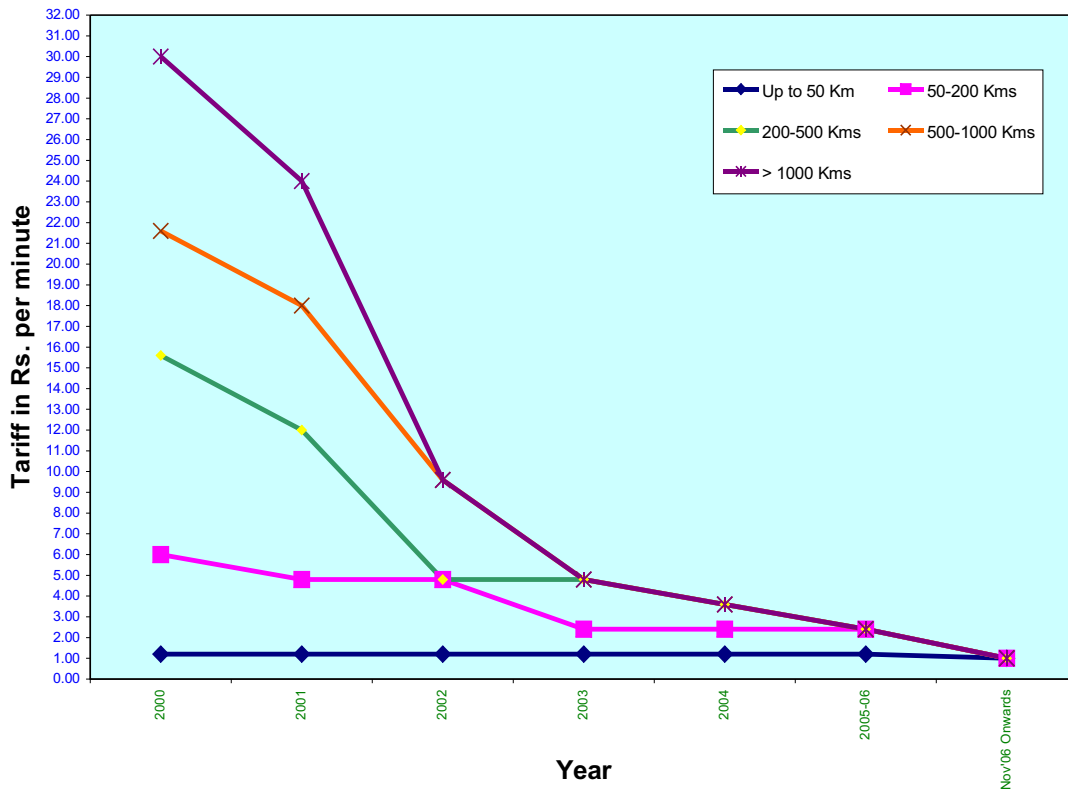
# Fixed Line Subscribers



Chart: Fixed Line Subscribers (In Millions)

| Year | Subscribers (In Millions) |
|------|---------------------------|
| 1997 | 14.54 |
| 1998 | 17.6 |
| 1999 | 21.59 |
| 2000 | 26.65 |
| 2001 | 32.65 |
| 2002 | 38.33 |
| 2003 | 40.91 |
| 2004 | 40.92 |
| 2005 | 41.43 |
| 2006 | 41.54 |
| 2007 | 40.75 |

# Decline in Fixed Line Service Tariffs:



Legend: Up to 50 Km · 50-200 Kms · 200-500 Kms · 500-1000 Kms · > 1000 Kms

Tariff in Rs. per minute — Year: 2000, 2001, 2002, 2003, 2004, 2005-06, Nov'06 Onwards
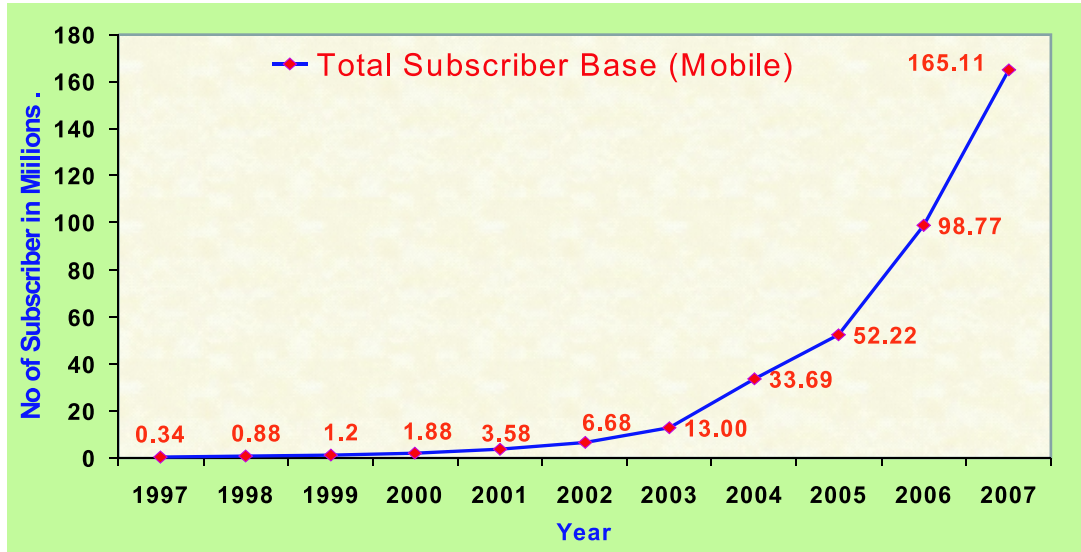
*Affordability*

*Regulatory Initiatives : Telecom*
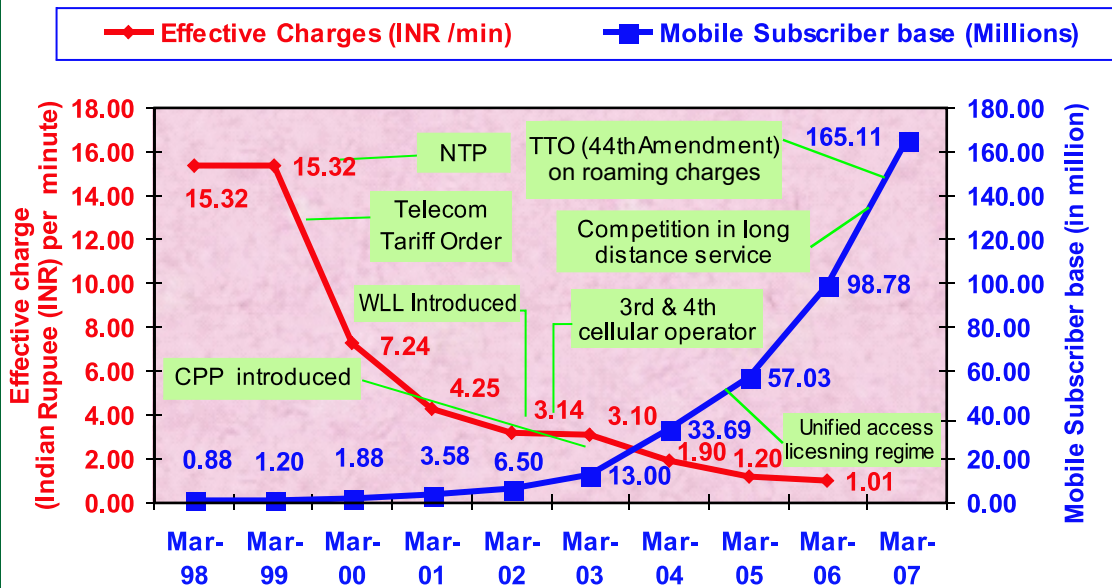
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## Promoting Competition

- Recommendations on Mobile Number Portability, 8th Mar 2006: Mobile Number Portability (MNP) allows Mobile subscribers to change their service provider while retaining their subscriber number.
- Recommendations on promotion of competition in International Private Leased Circuits (IPLC) Segment: - TRAI made recommendations on competition in IPLC segments and identifying bottleneck facilities for promoting competition in the international bandwidth segment in December 2005.
- Recommendations on resale in International Private Leased Circuits (IPLC) segment, 23rd March, 2007 - terms and conditions for resellers.
- Recommendations on Intra-circle Merger & Acquisitions guidelines made in January 2004..
- TRAI vide its recommendations on Unified Licensing Regime in October, 2003 had inter alia recommended that intra-circle Merger and Acquisition should be permitted subject to guidelines on Merger & Acquisition and other aspects of dominance will also be tested at the time of merger.
- Recommendation on Infrastructure Sharing, April 2007 - the exponential growth in wireless telecom services calls for massive investment in infrastructure particularly passive, active and backhaul components. The recommendations made include identification of critical infrastructure sites and infrastructure sharing of passive, active and backhaul network components.
- Recommendation on introduction of competition in 'National Long Distance Communications'.
- Recommendation on opening of the 'International Long Distance Service'.
- TRAI recommended in Aug. 2007 wide ranging reform measures on licensing policy for access services provisions: No merger & acquisitions allowed if the combined market power of both operators exceeds 40%. M&As shall not be allowed if it reduces the number of players in circle to less than four.

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# Mobile Subscribers

**No of Subscriber in Millions**

**Total Subscriber Base (Mobile)**

165.11

98.77

52.22

33.69

13.00

0.34  0.88  1.2  1.88  3.58  6.68

1997  1998  1999  2000  2001  2002  2003  2004  2005  2006  2007

**Year**

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# Impact of Steps Taken for Increasing Growth

## Mobile growth and effective charge per minute

**Effective Charges (INR /min)**    **Mobile Subscriber base (Millions)**

**Effective charge (Indian Rupuee (INR) per minute)**

**Mobile Subscriber base (in million)**

NTP

TTO (44thAmendment) on roaming charges

165.11

15.32

15.32

Telecom Tariff Order

Competition in long distance service

WLL Introduced

98.78

7.24

3rd & 4th cellular operator

CPP introduced

4.25

3.14  3.10

57.03

0.88  1.20  1.88  3.58  6.50

33.69

13.00

Unified access licesning regime

1.90  1.20

1.01

Mar-98  Mar-99  Mar-00  Mar-01  Mar-02  Mar-03  Mar-04  Mar-05  Mar-06  Mar-07

*Regulatory Initiatives : Telecom*

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# Licensing

Licensing
Terms & Conditions

- ✎ TRAI provided recommendations to the Government on Terms & Conditions of licensing new operators in almost all services of telecom sector, which facilitated liberalization of telecom market in India.
- ✎ Unified Licensing Regime: TRAI initiated the process of Unified Licensing in India. TRAI in its Unified Licensing recommendations in October 2003 had envisaged a two-stage process to introduce a Unified Licensing Regime in the Country. The first phase, implemented from November, 2003 onwards has put in place a Unified Access Licensing (covering both fixed and mobile services) in India. TRAI forwarded its recommendations for second phase i.e. Unified licensing for all telecom services on in January 2005. Unified Licensing regime would enable the provision of various services, both existing and new, by the service providers without the need for separate additional licenses, with the same media being used for different services which would build economies of scale and scope.
- ✎ Recommendations on Public Mobile Radio Trunked Service (PMRTS) paved the way for PSTN connectivity, reduction in license fee, choice of technology, new service areas along highways, etc.
- ✎ Recommendations to facilitate VSAT operations: TRAI recommended allowing higher data speed for VSAT users increasing it upto 2 Mbps, reduction in license fees for captive VSAT networks and reduction in the minimum Antennae size.
- ✎ Recommendation on review of Internet Service Provider (ISP) licensing regime: TRAI has recommended major functional and structural revamp of Internet Services including significant increase in the functional scope of ISP license and removal of restrictive provision in exiting licence conditions.
- ✎ Recommendation on 'Infrastructure Sharing' has proposed amendment in licenses of UASL/ CMSP to allow sharing of active infrastructure excluding sharing of spectrum.
- ✎ TRAI recommended in Aug. 2007 wide ranging reform measures on licensing policy for access services provisions: No cap be placed on the number of access service providers in any service area. Operator can offer GSM, CDMA or any other technology under same license.

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## Accelerating Growth of Internet and Broadband

- Broadband Policy, 2004:-recognizing the significant impact Internet and Broadband Services can play on the GDP growth in India as well as their potential to attract new investments and create additional jobs, TRAI submitted its recommendations to the Government on `Accelerating Growth of Internet and Broadband' in April 2004. Based on TRAI's recommendations, Government issued Broadband Policy in October, 2004.
- New Services such as Internet Telephony was also opened to ISPs.
- Recommendations on improvement in the effectiveness of National Internet Exchange of India (NIXI).

## Internet / Broadband Subscribers
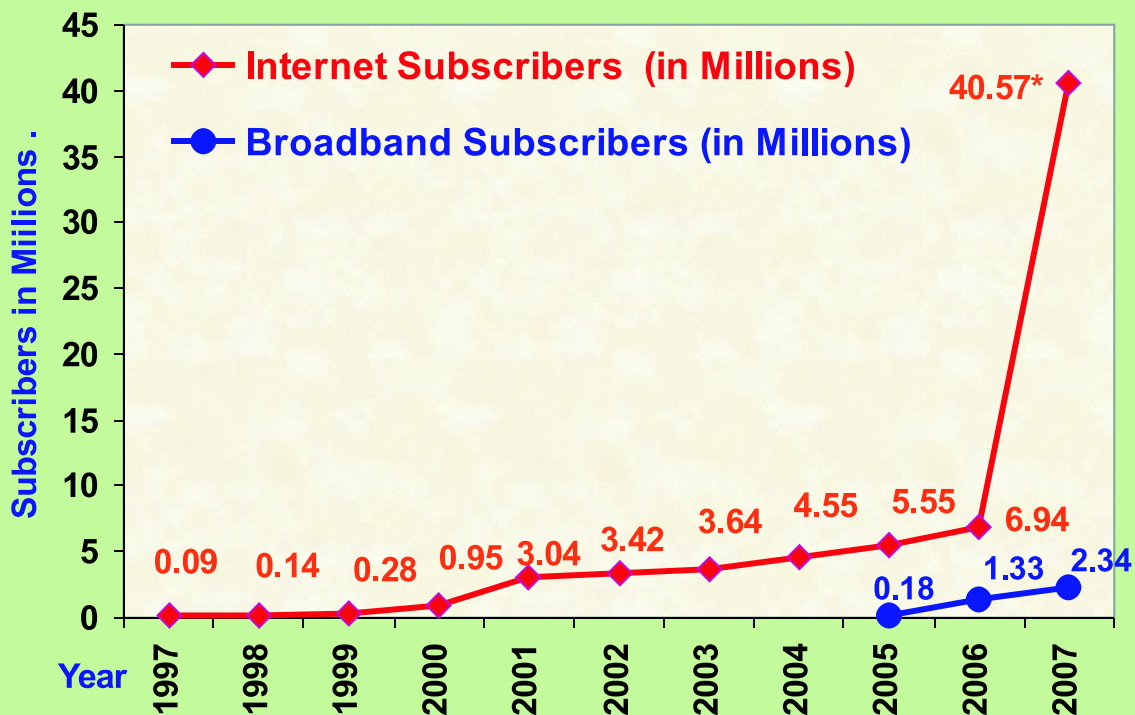


*The figure 40.57 consists of 9.27 millions wireline internet subscribers and 31.30 millions wireless internet subscribers as on 31st Mar, 2007

*Regulatory Initiative : Telecom*

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## Spectrum:

✎ Recommendations on allocation and pricing of spectrum for 3G and broadband wireless access services : The recommendations made in September 2006 on the issue focus on level playing field, technological neutrality and affordability while ensuring that spectrum is available to telecom operators wishing to provide 3G and Broadband Wireless Access (BWA) and thus deepening the penetration of telecom services in rural and urban India. TRAI gave a high priority to a forward looking and pragmatic long-term road map identifying bands of spectrum for immediate and future use thus ensuring that the benefits of technology is spread all over the country.    TRAI recommended that spectrum identified for 3G should be treated as a stand-alone allocation and not as an extension of earlier spectrum allocation of 2G. The Government should realize a spectrum acquisition fee from telecom service providers. The spectrum for immediate allocation in case of 3G services should be in 450 MHz, 800 MHz and 2.1 GHz. Rural roll out obligation imposed as part of overall roll out obligation in a time bound manner. Broadband Wireless Access (BWA) given a high priority. The Authority has identified 200 MHz of spectrum in 3.3-3.4 GHz and 3.4-3.6 GHz bands to about 13 carriers in contiguous blocks of 15 MHz each.

✎ TRAI recommended in Aug. 2007 wide ranging reform measures on licensing policy for access services provisions:

☞ Any licensee wishing to get additional spectrum beyond 10 MHz in existing 2G bands after reaching the specified subscriber numbers shall have to pay a onetime spectrum charge.

☞ All spectrum excluding the spectrum in 800, 900 and 1800 bands should be auctioned in future so as to ensure efficient utilization this scarce resource.

☞ Annual spectrum usage linked to the revenue of operators to be revised.
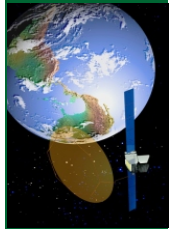
## Quality of Service

✏ TRAI laid down the standards of quality of service to be provided by the service providers for Basic (wireline), Basic Service (wireless) & Cellular Mobile Telephone Service, Internet Dialup Service, Broadband Service, VoIP based International Long distance Service and Code of Practice for Metering & Billing Accuracy. These regulations provide for various quality of service parameters with benchmarks. These benchmarks cover provision of service, fault repair, billing complaints, network parameters, response time to the customer for assistance and customer perception of service etc.

## Consumer Protection

✏ **Telecom Consumers Protection and Redressal of Grievances Regulations** issued in May 2007 specifies the framework for redressal of grievances of consumers for handling consumer complaints. The regulations envisage a three tier system viz. Call Centre, Nodal Officer and Appellate Authority within the service provider, for redressal of grievances of consumers within the specified time limit. The regulations also provide for provision of information to consumers through a Manual of Practice and also usage details to pre-paid mobile consumers on request.

✏ **Directions issued for Protection of Consumer Interests**:- To protect the interest of consumers and addressing general consumer concerns relating to availability, tariff, billing, quality of service, value added services, premium rate services and other matters, a number of directions and tariff orders have been issued.

✏ **Registration of Consumer Organisations**:- A regulation was notified in January, 2001 to facilitate registration of consumer organisations and Non-Government Organisations for closer interaction with them on issues relating to consumer protection.

✎ TRAI established a **Telecommunication Consumers Education and Protection Fund** through a regulation in June 2007. The income realized from the fund is to be utilized for undertaking programmes to educate the telecom consumers about various measures taken by the Government and TRAI for protecting their interests and to conduct studies and market research projects on matters relating to protection of the interests of telecom consumers.

✎ **Telecom Unsolicited Commercial Communications (UCC) Regulations** issued in June 2007 envisage a mechanism for curbing the unwanted telemarketing calls by setting up of a national database, containing list of telephone numbers of all such subscribers who do not want to receive the UCC. The database will be called National Do Not Call (NDNC) Registry . Subscribers who do not wish to receive UCC can register their telephone numbers with their telecom service provider for inclusion in the NDNC Registry. Telemarketer will have to verify their calling telephone number list with NDNC Registry before making a call.

✎ **Common Charter of Telecom Services:-** TRAI facilitated adoption of a common charter of telecom services by all the service providers in February, 2005. The charter was conceptualized and drafted in consultation with various Consumer Advocacy Groups, NGOs and the service providers to facilitate provision of service in the best. interest of consumers in a transparent manner.



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# Next Generation Network (NGN)

✎ TRAI is working for the smooth transition to an era of convergence of services and technologies in Next Generation Network environment.

✎ Recommendations on Next Generation Networks (NGN):-in March, 2006, TRAI submitted its recommendations on Next Generation Networks. Due to technological developments, there is a trend towards unification of networks & services leading to the emergence of NGN which are predominantly IP based; NGNs enable the Service Providers to provide a wide range of services (voice, data & video) on the same platform.   In addition, NGN also enables fixed mobile convergence resulting into reduced demand on mobile service spectrum. Major thrust of TRAI's recommendation is to bring out the urgent need for unified licensing regime to enable NGN networks to be utilized to their full capabilities and the need for awareness building about the various aspects of NGN.

✎ Recommendations made in May 2007 by the NGN-Expert Committee Core Groups include items relating to licensing issues, interconnection issues and Quality of Service issues in Next Generation network services environment.



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## Financial Data in respect of Telecom Service Providers

✎ Since November, 2006 TRAI as part of its information disclosure initiative has been displaying on it's website Service-wise and License-wise quarterly financial data pertaining to Gross Revenue, Adjusted Gross Revenue (AGR), Licence fees and Spectrum Charge of the Telecom service providers.

## Sector Revenue, Gross Assets, Net Assets and Capital Employed:
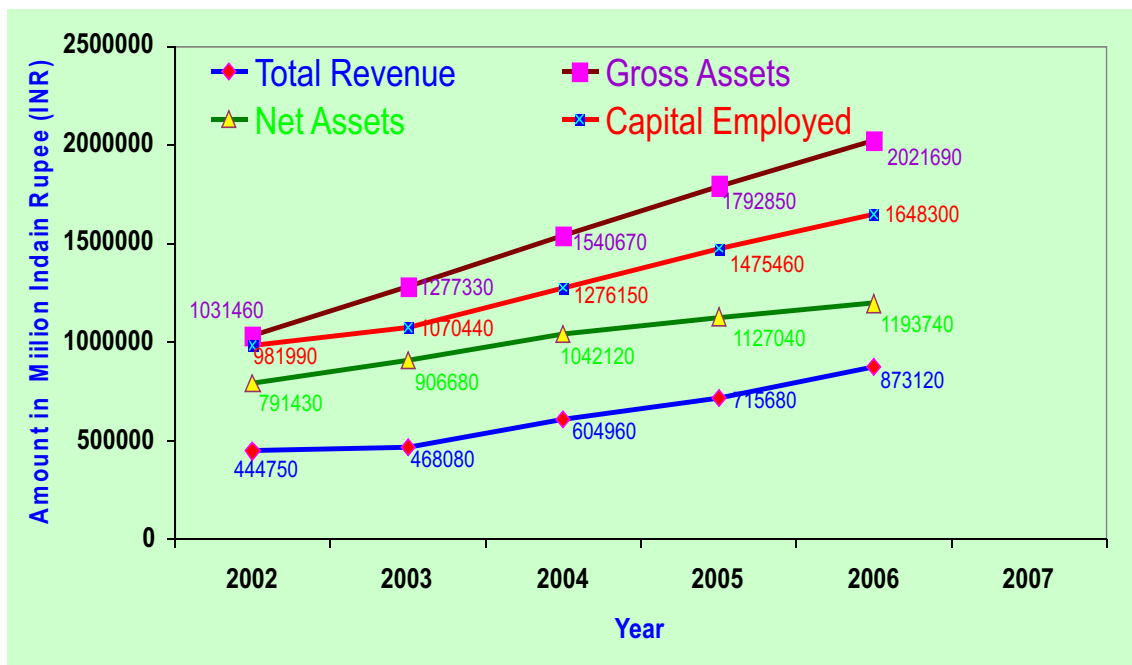
## Universal Service Obligations and Growth of Telecom Services in Rural India:

- ✎ Recommendations on Universal Service Obligation (USO) in October 2001:The Government had sought TRAI's recommendations on issues relating to Universal Service Obligation (USO). The Authority had recommended that initially Universal Service Levy (USL) be fixed at 5 percent of the adjusted gross revenue of all telecom service providers.

- ✎ The Authority also recommended that the USO support policy be implemented from April 2002:The Universal Service Support Policy came into effect from 1.4.2002. Subsequently, the Indian Telegraph (Amendment) Act, 2003 giving statutory status to the Universal Service Obligation Fund (USOF) was passed by Parliament in December 2003. The fund is to be utilized exclusively for meeting the Universal Service Obligations.

- ✎ The resources for implementation of USO are raised through a Universal Service Levy (USL) which has presently been fixed at 5% of the Adjusted Gross Revenue (AGR) of all Telecom Service Providers except the pure value added service providers like Internet, Voice Mail, E-Mail service providers etc. At present an amount of about 99000 millions Indian Rupees (INR) is available in USOF.

- ✎ The Universal Service Obligation Fund (USOF) is headed by the Administrator, USF. He is empowered to formulate procedures for implementation of the USO and disbursement of funds from the USOF. His office functions as an Attached office of the Department of Telecom, Ministry of Communications & IT.

- ✎ Presently the USO policy supports the following streams :
  - ☞ Stream-I: Provision of Public Telecom and Information Services.
  - ☞ Stream-II: Provision of household telephones in rural and remote areas as may be determined by the Central Government from time to time.

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☞ Stream-III: Creation of infrastructure for provision of Mobile Services in rural and remote areas.

☞ Stream-IV: Provision of Broadband connectivity to villages in a phased manner.

☞ Stream-V: Creation of general infrastructure in rural and remote areas for development of telecommunication facilities.

☞ Stream-VI: Induction of new technological developments in the telecom sector in rural and remote area.

✎ Recommendation on growth of telecom services in rural India: The recommendations provide for a higher quantitative and qualitative growth in telecom services in the country, particularly in rural areas. Since tele-density is interlinked with the level of development, the large differential between rural and urban tele-density cannot be sustainable. The Authority recommended that the present policy should shift from subsidy based on individual connections (DELs, VPTs, etc) to network infrastructure expansion approach and mobile services should be brought under the ambit of USO fund.

USO
Fund

TRAI was given the powers to regulate broadcasting and cable television sector only from 9.1.2004. As in the telecom sector, the functions of TRAI in relation to broadcasting and cable services can broadly be divided into two parts. One part relates to making recommendations either su-motu or on specific reference and the other relates to framing regulations and tariff setting. Since January 2004, TRAI has taken a number of initiatives. The segment wise information is given below:

## Regulation on Interconnection Issues

The regulatory frame work of 10.12.2004 (as amended from time to time)  provides for

✎     Non-discriminatory access to content across different platforms for delivery and distribution of television (TV) channels. This will promote competition and give choice to consumers.

✎     A procedures and a time frame for giving access to content on request.

✎     A procedure of notice including general notice to public before disconnection  of channels.

✎     A prescription for publishing term of interconnection called Reference  Interconnect Offer (RIO) by the service providers.

✎     Broad guidelines for arriving at the subscriber base in a non-addressable regime.

✎     Adoption of the terms contained in the Standard Interconnect Agreement in case of difficulties in agreeing to mutually acceptable terms and conditions  on interconnection. This will be applicable only to those service providers who are implementing conditional access system (CAS) in cable TV transmission.

## Licensing and promotion of Technology

- Recommendations on community radio stations (9.12.2004) covering issues of eligibility conditions, licensing process, funding, regulation, monitoring, and sharing of infrastructure of All India Radio (AIR), the public broadcaster.
- Recommendations on licensing issues relating to Satellite Radio (27.6.2005) which inter alia included provision of only one license for carriage, extension of AIR programme code and advertisement code to satellite radio, a common up-linking and down-linking policy for both.
- Recommendations relating to second phase of private FM radio broadcasting (11.8. 2004) which provided for a new licensing regime consisting of one time licensing fee and revenue share of 4 percent, migration of phase-I license fee to Phase-II regime, low entry fee and allowing maximum frequencies possible.
- Recommendations made on 14 September 2005 suggesting a voluntary approach to be adopted for a national plan for digitalisation commencing from April 2006 and concluding with the Commonwealth Games in 2010. The plan also provided for a very liberal and non-discriminatory licensing policy for setting up digital head ends.
- In the light of converged scenario of data, voice and video, recommendation were sent on 20.03.2006 to promote convergence and competition in broadcasting and telecommunication sectors providing for a converged regulatory regime, greater flexibility in spectrum administration, and rationalisation of entry fee for license.

## Promotion of Competition

- Detailed recommendations on 1.10.2004 to address the problems of an unregulated and fragmented industry covering the whole gamut of issues such as consumer choice including recommendations on conditional access system, pricing, interconnection agreement and revenue share, promotion of competition in the distribution of TV channels, rationalisation of license fee and taxation, Advertisements,
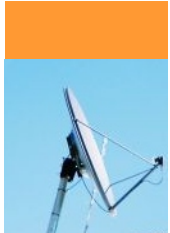
decentralised regulatory enforcement and quality of service. The thrust was to facilitate addressability, provide consumer choice, bring in transparency and to promote competition.

✎ Recommendation sent (August 2005) for entry of the private sector into terrestrial TV broadcasting which is a public sector monopoly.

✎ Recommendations sent on 25.8.2006 on licensing issues relating to Direct to Home (DTH), proposing that the DTH licensing conditions should be amended to specifically permit use of Multiple Dwelling Unit (MDU) technology to promote efficiency in costs and operations.

## Tariff Issues

✎ Tariff order freezing the cable charges to bring immediate relief to the consumers (15.1.04)

✎ Final determination of tariff on 1.10.2004 which essentially retained the protection given to the consumers through the freeze order of 15.1.2004, but simultaneously provided a window for introduction of new pay channels with appropriate pricing requirements.

✎ A framework for increase in tariff based on Wholesale Price Indices to prevent arbitrary increase in tariff for cable services.

## Intervention on conditional Access System (CAS)

✎ Significant intervention facilitated the roll out of CAS, which is a measure of transparency and addressability.

✎ A regulatory framework with low entry barrier was put in place providing for:
 ✐ A consumer friendly tariff regime for channels.
 ✐ An affordable tariff dispensation for supply of set top boxes
 ✐ A detailed framework setting up standard for quality of service.
 ✐ A workable formulation for overcoming the problems of interconnection.

## Achievements under CAS

- CAS has provided an opportunity to about 2.9 million Cable TV households to exercise choice between pay channels and Free to Air channels across the four metros of the country.
- Of the above 0.6 Million have opted to watch channels through the set top box.
- The option to choose channels and affordable schemes for supply of set top boxes presented an opportunity to the consumers to control their monthly cable bill by careful selection of channels.
- Around 1200 interconnection agreements could be concluded amongst the service providers in a very short time frame, which otherwise would have been a tall order but for the regulatory prescription of a Standard Interconnect Agreement.
- CAS has facilitated transparency in the operations and subscriber base thereby facilitating Governments to get the legitimate tax revenues.

## Growth Indicator

|  | Year 2003 | Year 2006 |
|---|---|---|
| **Number of TV households (in Millions)** | 90 | 121 |
| **Number of Cable TV homes (in Millions)** | 50 | 71 |
| **Cable TV ARPU per month (INR)** | 144 | 158 |
| **Cable TV Revenue  (in million INR)** |  |  |
| **- Total** | 118170 | 185085 |
| **- Subscription** | 81945 | 129245 |
| **- Advertisement** | 36225 | 55840 |

**INR - Indian National Rupee**

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## Digital Divide

- Rural tele-density is around 5% where as urban is approx 50%. The wide gap in tele-density needs to be addressed on priority.
- USO Fund Administrator has initiated process to setup towers for mobile services in identified rural areas with USOF subsidy support. This will encourage mobile penetration in rural areas.
- Internet and broadband penetration in rural areas is very low. It is envisaged to cover primary health centers and secondary schools in villages but progress is slow. This require allocation of spectrum for wireless broadband on priority basis.

## Technology

- 80% new subscribers for voice estimated to be wireless. Usage of Wireless will also increase Broadband penetration.
- VOIP becoming future proof option.
- Issues like unbundling likely to loose relevance by demonopolisation of local loop by alternate technologies.
- Pressure on availability of the spectrum to support various wireless services.
- Migration from service specific spectrum allocation to service neutral spectrum allocation.
- Increasing utilization of bandwidth hungry applications shifting to huge requirement of Optical fiber around 2012 or so.

## Applications & Services

- Growth of Internet Telephony and data services, especially in rural areas.
- Need to focus on rural segment to use broadband as enabler for e-education, e-health, e-governance, and agriculture related help/ online advice.
- Development of new user friendly contents like news, map service, entertainment and marketing guide.
- Location based marketing services on mobile handsets.
- e-ticketing, mobile banking and access to various commercial portals from Mobile handsets.
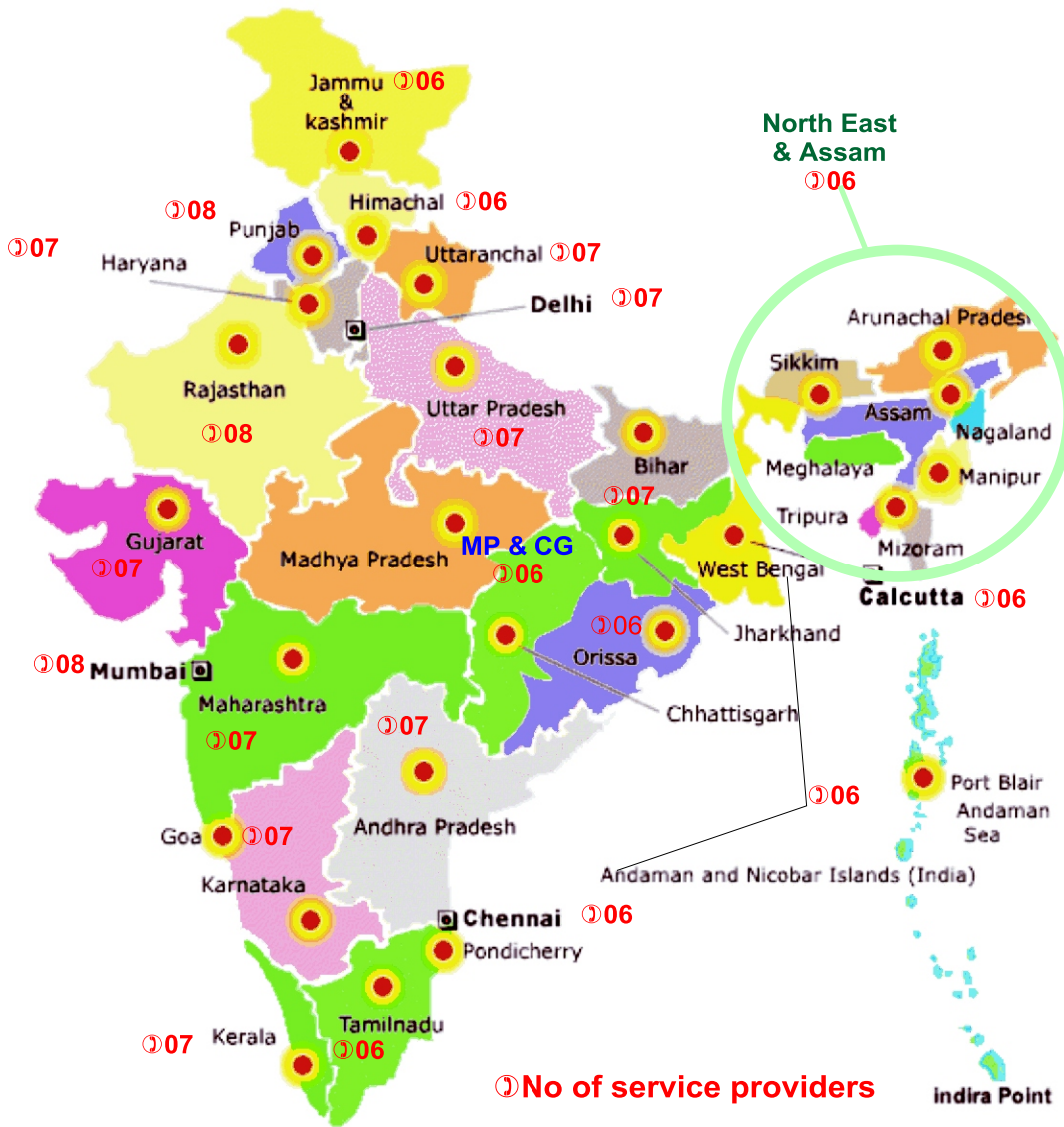
*Path Ahead*

## Path Ahead

### Affordability

- Inexpensive Customer Premises Equipment for broadband.
- Development of customer premises devices having options to use 3G, WI-Fi and Wi-Max.
- Shift from Desk top and laptop to hand held devices.
- Single information access for multiple services.
- Convergence of services and networks.
- Change from service specific licenses to service neutral licenses.
- Reduction in service cost due to innovation in technology, markets and competition.

### Challenges

- 500 million subscribers by year 2010.
- Declining Average Revenue per User (ARPU).
- Provisioning of affordable services to increase penetration in rural and far flung areas.
- Fulfilling increasing subscribers demand of newer services and applications.
- Need of high level of investment.
- Quality of service to customers.
- Issue of Infrastructure development.
- Spectrum management.
- Convergence of telecom, information and broadcasting networks due to technological advancements.
- Unification of services through convergence.
- Different network platforms carrying a range of voice, video and data transmission services.

## INDIA: A Promising Economy for Telecom Growth

India is second most populated country in the world. It is having total geographical area of about 3,287,590 sq km. Population of India is about 1.12 billions. India is having very rapid growing market for Telecom. At present, there is addition of about six millions mobile telephones on an average every month. India is divided into 23 telecom service areas/ circles covering the entire country. India has the forth largest telecom network in the world with a subscriber base of 241 millions.

Jammu & kashmir ☽06

North East & Assam ☽06

☽08
☽07 Punjab
Haryana
Himachal ☽06
Uttaranchal ☽07
Delhi ☽07

Arunachal Pradesh
Sikkim
Assam
Nagaland
Meghalaya
Manipur
Tripura
Mizoram

Rajasthan
☽08

Uttar Pradesh
☽07

Bihar
☽07

Gujarat
☽07

Madhya Pradesh
MP & CG ☽06

West Bengal
Calcutta ☽06

Jharkhand
☽06
Orissa
Chhattisgarh

☽08 Mumbai
Maharashtra
☽07

☽07

Andhra Pradesh

☽06
Port Blair
Andaman Sea

Goa ☽07
Karnataka

Andaman and Nicobar Islands (India)

Chennai ☽06
Pondicherry

☽07 Kerala
Tamilnadu ☽06

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☽No of service providers

indira Point

*Telecom Service Areas of India*

सत्यमेव जयते

Telecom Regulatory Authority of India (TRAI)