



Deregulation and streamlining prices in telecommunication industry in Delhi

DEREGULATION AND STREAMLINING PRICES IN TELECOMMUNICATION INDUSTRY IN DELHI

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INTRODUCTION

The Telecom services sector was opened for private participation in 1994, based on National Telecom Policy (NTP) framed in that year which initiated the first generation reform process. However, in line with the rest of the world, the policy makers in India adopted an evolutionary approach towards competition and opted for limited competition that is allowing only two players in each of the four metro circles, which were opened for private players. Then Bharti (Airtel) & Hutch came in to existence in 1995. In 2001 VSNL & MTNL were allowed as third players.

Until the mid-1990s the ownership of a telephone in India was considered a luxury, not a consumer item. The waiting period for a landline could extend from five to ten years. Even in 1996, for instance, people were waiting for a telephone after having paid a hefty amount as an application deposit for three to five years. India is proud of its telecom reforms, which have benefited the rich and the poor alike. Today people from all walks of life including small/self-employed service providers are holding an affordable mobile phone & in many states companies are competing to gain customers and there is no waiting list. Mobile telephone services have become so cheap now that subscriptions have outpaced fixed line connections. In 2005 and 2006 on average 4.5 million new mobile subscribers were added every month.

It has increased their daily earnings to 3 - 4 times. The Tele density has increased from 1% to 15%.

In India the liberalization of telecommunications was ushered in the early 1990s by the Congress regime, the nationalist BJP regime further liberalized the industry.

Association of Unified Telecom Service Providers of India (AUSPI) has played an important role in the telecom reforms leading to increased tele density, reaching far-flung areas, reduction in tariffs



to make the phones affordable and bringing in real competition in the telecom services sector.

AUSPI's Members have already invested over Rs. 40,000 crores and are present in over 4,500 locations and are extending mobile footprints to cover nearly three Lakh villages.

AUSPI, under the overall prominent leadership of Mr. Ratan N Tata and Mr. Anil D Ambani and its newly elected president Mr. B. B Anand and Vice President Mr. Ashok Sud, have set a goal of delivering enhanced value for customers by giving more affordable services, innovative products and value added services. World-renowned vendors / technology developers viz Qualcomm, Lucent Technologies, ZTE Telecom and Huawei Telecommunications have joined AUSPI as Associate Members. Other leading vendors are in the process of joining AUSPI to support the promotion of CDMA Technology towards achievement of national goal of 250 million phones by the end of the year 2007, 500 million phones by 2010 and 600 million phones by the end of 11th Five Year Plan.

AUSPI Members have already started roll out of their networks in semi urban and rural areas and is fully supporting Government in its infrastructure-sharing scheme under USO fund so that goals of rural tele-density are also met along with overall goals of further enhancing the tele-density in India. AUSPI is fully with the Government in all its efforts to achieve goals of Rural Tele density.

AUSPI will be closely working with incumbent so that long pending issues of interconnection are solved. AUSPI will try to make it possible to get interconnection with BSNL as fast as it is being done with the other private service providers.

AUSPI has taken up very strongly with the Ministries of Communications & IT and Finance for reduction of Revenue share license fee to 6%.



Telecom Regulatory Authority of India was established on 28.3.1997 under "The Telecom Regulatory Authority of India Act 1997" as the apex body for Telecom Sector and amended in 2000. Powers and functions assigned to TRAI under the Act result inter alia in its activities aimed at providing better access for general public to various services and encouragement to the service providers to improve efficiency of operations and the quality and scope of telecommunication services in the country. TRAI's mission is to create and nurture conditions for growth of telecommunications in the country in a manner and a pace which will enable India to play a leading role in emerging global information society. One of the main objectives of TRAI is to provide a fair and transparent policy environment which promotes a level playing field and facilitates fair competition. In pursuance of the above objective, TRAI has issued from time to time a large number of regulations, orders and directives to deal with issues coming before it and provided the required direction to the evolution of Indian telecom market from a Government owned monopoly to a multi operator multi service open competitive market. Functions of Authority (Section 11 of the TRAI Act) (1) Notwithstanding anything contained in the Indian Telegraph Act, 1885 (13 of 1885), the functions of the Authority shall be to-

(a) make recommendations, either suo motu or on a request from the licensor, on the following matters, namely:- i. need and timing for introduction of new service provider; ii. terms and conditions of license 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 improvements in the services provided by the service providers. vi. Type of equipment to be used by the service providers 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;

(b) discharge the following functions, namely:- i. ensure compliance of terms and conditions of license; ii. notwithstanding anything contained in the terms and conditions of the license granted before the commencement of the Telecom Regulatory Authority of India (Amendment) Act, 2000, 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 of sharing their revenue derived 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 services; vi. lay down and ensure the time period for providing local and long distance circuits of telecommunication between different service providers; vii. maintain register of interconnect agreements and of all such other



matters as may be provided in the regulations; viii. keep register maintained under clause (vii) 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; ix. Ensure effective compliance of universal service obligations:

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

(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 this Act: PROVIDED that the recommendations of the Authority specified in clause (a) of this sub-section shall not be binding upon the Central Government: PROVIDED further that the Central Government shall seek the recommendations of the Authority in respect of matters specified in sub-clauses (i) and (ii) of clause (a) of this sub-section in respect of new licence to be issued to a service provider and the Authority shall forward its recommendations within a period of sixty days from the date on which that Government sought the recommendations: PROVIDED also that the Authority may request the Central Government to furnish such information or documents as may be necessary for the purpose of making recommendations under sub-clauses (i) and (ii) of clause (a) of this sub-section and that Government shall supply such information within a period of seven days from receipt of such request: PROVIDED also that the Central Government may issue a license to a service provider if no recommendations are received



from the Authority within the period specified in the second proviso or within such period as may be mutually agreed upon between the Central Government and the Authority: PROVIDED also that if the Central Government having considered that recommendation of the Authority comes to a prima facie conclusion that such recommendation cannot be accepted or needs modifications, it shall, refer the recommendations back to the Authority for its reconsideration, and the Authority may within fifteen days from the date of receipt of such reference, forward to the Central Government its recommendation after considering the reference made by the Government. After receipt of further recommendation, if any, the Central Government shall take a final decision. (2) Notwithstanding anything contained in the Indian Telegraph Act, 1885 (13 of 1885), the Authority may, 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 under this Act including the rates at which messages shall be transmitted to any country outside India; PROVIDED that the Authority may notify different rates for different persons or class of persons for similar telecommunication services and where different rates are fixed as aforesaid the Authority shall record the reasons therefore. (3) While discharging its functions under sub-section (1) or subsection (2), the Authority shall not act against the interest of the sovereignty and integrity of India, the security of the State, friendly relations with foreign States, public order, decency or morality. (4) The Authority shall ensure transparency while exercising its powers and discharging its functions. (ii) The powers and duties of its officers and employees A Powers of Authority to call for information conduct investigations, etc. (Section 12 of the TRAI Act)(1)Where the Authority considers it expedient so to do, it may, by order in writing. (a) call upon any service provider at any time to furnish in writing such information or explanation relating to its affairs as the Authority may require; or (b) appoint one or more persons to make an inquiry in relation to the affairs of any service provider; and (c) direct any of its officers or employees to inspect the books of account or other documents of any service provider.(2)Where any inquiry in relation to the affairs of a service provider has been undertaken under sub-section (1)- (a) every



officer of the Government Department, if such service provider is a department of the Government; (b) every director, manager, secretary or other officer, if such service provider is a company; or (c) every partner, manager, secretary or other officer, if such service provider is a firm; or (d) every other person or body of persons who has had dealings in the course of business with any of the persons mentioned in clauses (b) and (c), shall be bound to produce before the Authority making the inquiry, all such books of account or other documents in his custody or power relating to, or having a bearing on the subject-matter of such inquiry and also to furnish to the Authority with any such statement or information relating thereto, as the case may be, required of him, within such time as may be specified. (3) Every service provider shall maintain such books of account or other documents as may be prescribed. (4) The Authority shall have the power to issue such directions to service providers as it may consider necessary for proper functioning by service providers. Powers of Authority to issue directions (Section 13 of the TRAI Act) The Authority may, for the discharge of its functions under sub-section (1) of section 11, issue such directions from time to time to the service providers, as it may consider necessary.: PROVIDED that no direction under sub-section (4) of section 12 or under this section shall be issued except on the matters specified in clause (b) of sub-section (1) of section 11. C Duties of Authority, its Officers and employees Chairperson The Chairperson has powers of general superintendence and directions in the conduct of the affairs of the Authority and he, in addition to presiding over the meetings of the Authority, exercises and discharges such powers and functions of the Authority and discharges such other powers and functions as may be prescribed. Members are responsible for all technical and administrative matter relating to various issues arising out of performance and quality of service, access to interconnections, revenue sharing, call charges / tariff, charging mechanism, IUC charges etc. Secretary The Secretariat of TRAI is headed by the Secretary who works through nine functional Divisions - Mobile Network, Fixed Network, Converged Network, Quality of Service, Broadcasting & Cable Services, Economic, Financial Analysis, Legal, and Administration & Personnel. He looks after manpower planning, deployment,



promotions, transfers in accordance with laid down rules. He steers the effort for human resource development & training. All proposals for consideration of the Authority are processed through the Secretary. Secretary coordinates preparation, issue of agenda papers for Authority meeting in consultation with Chairman. He organizes preparation of minutes of Authority meeting and issue of regulations / directives / guidelines / interventions in accordance with the decisions of Authority.

TRAI has taken several measures in the past to protect the interest of consumers. The measures taken by TRAI in this regard are given below for awareness of consumers of telecom services:

Tariff related issues:

- ◆ Presenting, marketing or offering tariff plan in any misleading manner is not permitted. All monthly fixed recurring charges which are compulsory for the subscriber under any given plan shall be conveyed as a single figure under one head.
- ◆ The Service Providers must inform the customer in writing, within a week of activation of service, the complete details of his tariff plan. In addition, as and when there are any changes in any aspect/item of tariff in the chosen package, the operator shall intimate, in writing, such changes to those subscribers whose tariff packages undergo a change.



- ◆ A tariff plan once offered by a service provider shall be available to a subscriber for a minimum period of 6 months from the date of his enrolment into that tariff plan. During this 6 months period, the service provider is free to reduce the tariff; but increase in any item of tariff in the plan is not permitted. However, the subscriber is free to choose any other tariff plan even during the 6 months period.

- ◆ Customer has the right to move from one tariff to another plan offered by his service provider any time without having to pay any fee for the migration. A subscriber's request for a change of tariff plan shall be accepted and implemented immediately or from the start of the next billing cycle.

Value Added Services:

- ◆ No chargeable value added service, shall be provided to a customer without his explicit consent. Any value added service, which was earlier being provided free of charge, shall not be made chargeable without the explicit consent of the customer. The above provisions are also applicable to Internet Service Providers.

- ◆ Voice Mail Service should not be offered without the prior consent of the subscriber.



Pre-paid customers:

- ◆ All services, which do not affect “talk time value”, including incoming calls/SMS shall continue to be available to the Prepaid Subscribers during the entire validity period even if the talk time value has exhausted.
- ◆ The unused balance to pre paid subscribers has to be carried forward during the grace period applicable at the time of recharge.

Advertisement:

- ◆ The Service Providers must publish in all communications/ advertisements relating to premium rate services, e.g. ring tones, wall paper, astrology, quiz etc. the pulse rate/ tariff for the service.
- ◆ Websites of the service providers shall contain comparison of tariff plans in terms of estimated monthly bill, i.e. financial implications based on certain preset assumptions along with the complete details.

Roaming:

- ◆ Whenever a subscriber roam into another license area he should be informed through SMS by the operator that he will



be charged for the roaming facility only when he chooses to either make or receive a call while roaming and no roaming rental shall be charged until roaming is activated i.e. a call is either made or received while roaming.

Consumer complaints:

- ◆ TRAI is not empowered to handle individual consumer complaints against service providers, but will look into issues of systemic failure or of generic nature affecting large number of consumers. Consumers may approach the service providers or Consumer Redressal Forum for redressal of their grievances. For speedy redressal of grievances of telecom consumers, TRAI has recommended to the Government for setting up of an Ombudsman.

Common Charter:

- ◆ TRAI, in consultation with various NGOs/ Consumer Advocacy Groups and telecom service providers, finalized a Common Charter for adoption by all the Telecom Service Providers. The Common Charter is a voluntary declaration of the Service Providers to promote the services in the best spirit of competition and traditions of service. The Charter, inter alia, acknowledges the rights of the citizens to have a free choice



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in selecting the Service Providers, right to education, representation and redress of complaints.

Other Regulations:

- ◆ The Regulations on Guidelines for Registration of Consumer Organization /NGO'S & their interaction with TRAI.
- ◆ Telecommunications Consumers Education & Protection Fund Regulations.
- ◆ Telecom Consumer Protection & Redressal of Grievances Regulations.
- ◆ The Telecommunications Interconnection Usage charges Regulations.
- ◆ The Telecommunications interaction Amendment Regulations.

REVIEW OF LITERATURE

Lars-Hendrik Roller & Leonard Waverman (2001) in their study investigated how telecommunications infrastructure affects



economic growth. They used evidence from 21 OECD countries over a 20-year period to examine the impacts that telecommunications developments may have had. They jointly estimate a micro model for telecommunication investment with a macro production function. They found evidence of a significant positive causal link, especially when a critical mass of telecommunications infrastructure is present. Interestingly, the critical mass appears to be at a level of telecommunications infrastructure that is near universal service.

JERRY A. HAUSMAN his paper deals with how to value the introduction of new services in telecommunications. Much public discussion has centered on the evolving "information superhighway" as well as on the many new services that may be offered as high-capacity fiber optic transmission networks are extended into the telecommunications infrastructure. The Federal Communications Commission (FCC) has decided to tax long distance Users to subsidize Internet access to schools and libraries. The cost is estimated to exceed \$2 billion a year. Numerous cable companies, such as Time Warner, have announced plans to upgrade their current coaxial-based networks to combined fiber-coax networks. This increased transmission capacity will allow many more channels of entertainment, high-speed access to information, and new interactive services. How can society establish the value of these new services and increased choices? This question has potentially important economic consequences and equally important public



policy implications. Because of the network structure of telecommunications, public policy has always played a large role in its production and regulation. In countries such as the United States and Canada, very strict regulation (which is only slowly being loosened) has limited the ability of companies to compete freely in telecommunications. By demonstrating how to value new telecommunications services, he allowed for a more reasoned approach to the necessary benefit-cost calculations; this approach can help both to guide public investment in telecommunications infrastructure and to evaluate the effects of regulation. To value new telecommunications services, he has applied the method first introduced by the Nobel prizewinning economist Sir J. R. Hicks.' The basic idea underlying the economic approach to valuing new goods or services is the recognition that until these goods actually come on the market, consumers are unable to purchase them at any price, no matter how much they would like to buy them. Thus, in some sense, the price of the new good or service might as well be infinite. A more refined economic approach estimates the "virtual" or "reservation" price that sets demand for the new good or service to zero. At this virtual price, demand is zero, so a "virtual equilibrium" exists between demand and supply (which is zero). Estimation of the virtual price along with the expenditure function (demand curve) for the new good or service gives the economic value. The actual price of the new service will usually be well below the virtual price. The quantity consumed multiplied by the difference between the virtual price and the market price



(multiplied by one-half) approximates the fundamental gain in value, also called the consumer surplus, from the new service.' This economic approach uses market demand to value new goods and services because the market establishes what consumers are willing to pay. He found that the introduction of new telecommunications services can lead to very large gains in consumer welfare. Consider voice messaging services introduced by local telephone companies in 1990; he estimated that the gain in consumer welfare from these new services was \$1.27 billion a year by 1994. Similarly, the introduction of cellular telephone services has led to estimated gains in consumer welfare of about \$50 billion a year.

According to Taghi M. Khoshgoftaar, David L. Lanning, and Abhijit S. Pandya the extreme risks of software faults in the telecommunications environment justify the costs of data collection and modeling of software quality. Software quality models based on data drawn from past projects can identify key risk or problem areas in current similar development efforts. Once these problem areas are identified, the project management team can take actions to reduce the risks. Studies of several telecommunications systems have found that only 44% of the system modules were complex. Since complex modules are likely to contain a large proportion of a system's faults, the approach of focusing resources on high-risk modules seems especially relevant to telecommunications software development efforts. A number of



researchers have recognized this, and have applied modeling techniques to isolate fault-prone or high-risk program modules. A classification model based upon discriminate analytic techniques has shown promise in performing this task. They introduced a neural network classification model for identifying high-risk program modules, and they compared the quality of this model with that of a discriminate classification model fitted with the same data. They found that the neural network techniques provide a better management tool in software engineering environments. These techniques are simpler, produce more accurate models, and are easier to use.

Bernardo Bortolotti, Juliet D'Souza, Marcella Fantini and William L. Megginson examined the financial and operating performance of 31 national telecommunication companies in 25 countries that were fully or partially privatized through public share offering between October 1981 and November 1998. Using conventional pre- versus post-privatization comparisons, they found that profitability, output, operating efficiency and capital investment spending increase significantly after privatization, while employment and leverage decline significantly. However, these univariate comparisons do not account for separate regulatory and ownership effects (retained government stake), and almost all telecoms are subjected to material new regulatory regimes around the time they are privatized. They examined these separate effects using both



random and fixed-effect panel data estimation techniques for a seven-year period around privatization. They verified that privatization is significantly related to higher profitability, output and efficiency, and with significant declines in leverage. However, they also found numerous separable effects for variables measuring regulation, competition, retained government ownership and foreign listing (on U.S. and U.K. exchanges). Competition significantly reduces profitability, employment and, surprisingly, efficiency after privatization, while creation of an independent regulatory agency significantly increases output. Retained government ownership is associated with a significant increase in leverage and a significant decrease in employment, while price regulation significantly increases profitability. Major efficiency gains result from better incentives and productivity, rather than from wholesale firing of employees and profitability increases appear to be caused by significant reductions in costs—rather than price increases. On balance, they concluded that the financial and operating performance of telecommunications companies improves significantly after privatization, but that a sizable fraction of the observed improvement results from regulatory changes—alone or in combination with ownership changes— rather than from privatization alone.

Hernán Galperin & Judith Mariscal (2007) Access to telephony for low-income groups is largely based on different strategies of use around mobile telephony. The main goal of this research project is



to understand the strategies employed by the poor in Latin America and the Caribbean to access and use mobile telephony services, as well as to identify the major market and regulatory barriers for increased penetration and usage. More generally, it seeks to contribute to the discussion about how access to mobile telephony contributes to improving the livelihoods of the poor-what we call mobile opportunities. Their results showed that mobile telephony is highly valued by the poor as a tool for strengthening social ties and for increased personal security, and that it is beginning to prove useful for enhancing business and employment opportunities. Overall, their results suggest that the economic impact of mobile adoption by the poor is mediated by social capital variables such as the strengthening of trust networks and improved coordination of informal job markets. These findings reveal the continued need to innovate in business models that extend the market frontier for mobile telephony. They also highlight the urgent need to rethink public policies that are premised on the mobile phone as a luxury good. For the poor, mobile telephony has long become the most cost-effective and accessible alternative.

Harald Gruber Frank Verboven & Boulevard Konrad (2001) analyzed the effects of government policies on the evolution of an industry, the global mobile telecommunications market. (i)They found relatively slow diffusion convergence between countries. This



follows partly from regulatory delay in issuing first licenses, yet persisting initial cross-country differences also contribute to a lack of convergence. (ii) Introducing competition has a strong immediate impact on diffusion, but a weak impact afterwards; sequential entry is receded by pre-emptive behavior by incumbents. This is consistent with the presence of consumer switching costs. (iii) Setting a single technological standard accelerates the diffusion of analogue technologies considerably; for digital technologies, it is too early to draw reliable conclusions, yet the available evidence suggests that setting single standards has similar beneficial effects.

Robert S. Pindyck (2004) addresses the impact on investment incentives of the network sharing arrangements mandated by the Telecommunications Act of 1996, with a focus on the implications of irreversible investment. Although the goal is to promote competition, the sharing rules now in place reduce incentives to build new networks or upgrade existing ones. Such investments are irreversible - they involve sunk costs. The basic framework adopted by regulators allows entrants to utilize such facilities at prices reflecting what it would cost a new, efficient, large-scale network to be built. Such sharing opportunities are extensive, covering virtually the entire suite of network services provided, and extremely flexible, as the entrant can rent facilities in small increments for short duration, with no long-term contracts required. Because the entrant does not bear the sunk costs, this



leads to an asymmetric allocation of risk and return that is not properly accounted for in the pricing of network services which creates significant investment disincentive. Current network sharing rules in telecommunications ignore the importance of the irreversibility of capital investment. As discussed in his paper, this reduces the incentive to invest, which in the long run welfare is reducing for the consumers of telecom services.

Williams et al conducted a study on the importance of telecommunications: a comparison of the viewpoints of information systems managers in small business and hospitals. They found that:

- Managerial issues such as data security & the strategic planning of information technology were rated as more important than the standard applications or technical issues. Managerial issues are clearly important for the long-term survival of all organizations.
- They found that IS managers in Hospitals rated video teleconferencing ($t=4.21$, $p<.0001$) & telecommuting ($t=2.43$, $p=.0159$) more highly than the IS managers in Small Businesses.
- They found that there is no difference between the responses of IS managers of Small Businesses & Hospitals ($x=4.179$, $P=.5240$) about the development & implementation of telecom plan. It was alarming that approximately fifty percent of the organizations in both surveys do not have a



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telecommunication plan. They appear to be stressing the day-to-day operations as opposed to analyzing ways of achieving a competitive advantage in future.

OBJECTIVE



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- To study the impact of competition introduced through deregulation on the prices of services provided by Bharti (Airtel), Vodafone (Hutch), Idea and MTNL.
- To study the impact of competition introduced through deregulation on the services provided by Bharti (Airtel), Vodafone (Hutch), Idea and MTNL.

METHODOLOGY

The objective of the study was to see the changes in the prices of services of the Telecom companies like Airtel, Vodafone (Hutch), Idea & MTNL since deregulation. The data was taken from the quarterly reports of the Telecom Regulatory Authority of India



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(TRAI) & a Telecom related magazine “Telecomlive”. Using Graphs & Tables trends in changes in the prices of services have been shown.

DATA REQUIREMENTS & SOURCES

Data was taken from the quarterly reports of the TRAI (Telecom Regulatory Authority of India) & a Telecom related magazine “Telecomlive”.



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Change in the Prices of Services

Before 1999, call rates were Rs 16.80/min for both outgoing & incoming calls for all the operators. In 1999 with the introduction



of TTO (Telecom Tariff Order), call rates slashed to Rs 6/min since the telecom operators were given autonomy to fix their rates individually. For Airtel, call rates to fixed, WLL & cellular operators were Rs 5.40/min each & Rs 3.96 for incoming calls. In 2003, call rates for fixed line fell down to Rs 2.80/min & Rs 2.40 for cellular calls. Incoming calls were made free in 2003. In 2004, call rates for fixed, WLL & cellular slashed further to Rs 2.25/min each & in 2005 the call rates fell further to Rs 2/min for WLL/fixed & cellular. Thereafter all the call rates have stabilized. The curves for fixed & WLL calls are coinciding in 2002 since both the rates are same since 2002. The curves for outgoing calls is falling till 2004 thereafter it has stabilized. The incoming calls curve fell progressively & coincided with X-axis since incoming calls were made free in 2003.

In 2002 for Vodafone (Hutch) the call rates were Rs 5.4/min for all fixed, WLL & cellular calls. Incoming calls were charged at Rs 3.96/min but in 2003 call rates slashed to Rs 2.80/min for fixed/WLL calls & Rs 2.40/min for GSM calls. In 2004, call rates fell further to Rs 1.99/min for calls to all three fixed/WLL/cellular phones. In 2005 call rates remained same for all three types of calls & thereafter all call rates remained constant. That's why the curves are first falling till 2004 & thereafter the curves are horizontal at Rs 1.99. In May 2003



Incoming calls are made free that's why the curve is initially falling & in 2003 coinciding with the horizontal axis.

Idea was established in 2002 only. Call rates in 2003 were Rs2.49/min for cellular, fixed & WLL calls. In 2004, call rates slashed to Rs 1.75/min for fixed, WLL & cellular calls. In 2005, call rates were same as in 2004. In 2006 call rates increased marginally to Rs 1.99/min fixed & WLL but fell for GSM calls to Rs 0.99/min. In 2007, call rates were increased for GSM to Rs 1.99/min & were same for fixed & WLL operators. That's why the curves for fix & WLL calls are coinciding with each other. The curve for incoming calls is coinciding with the x-axis since incoming calls are free since 2003. The curve for outgoing cellular calls is falling first from 2.49 to 1.75 then again fallen to 0.99 & finally rising to 1.99. The call rates are almost identical for all the three players since 2005. Competition has lead to falling prices. If one Player reduced call rates, there is pressure on others to reduce call rates equally.

For MTNL in 2002, the call rate was Rs 2.50/min for outgoing & Rs 1.80/min for incoming calls. In 2003, calls rates slashed to Rs 2.6/min for fixed & WLL calls and Rs 2.10 for cellular calls. In 2004, call rates were same as in 2003. In 2005, the call rates fell further to Rs 2/min for WLL/fixed & for cellular Rs 1.50/min for calls to all operators. In 2006, call rates remained same as



2005. In 2007 call rates slashed further to Rs 1.20/min for all Fixed, WLL & Cellular calls. So, MTNL also faced competition from other Players & therefore reduced rates. The curve for fixed & WLL calls are coinciding as they are identical since 2002. The curve for outgoing cellular is also downward falling from Rs. 2.5 to 2.1 to 1.5 to 1.2 finally. As for other players incoming calls curve is coinciding with the x-axis after 2003 since incoming calls were made free in 2003.

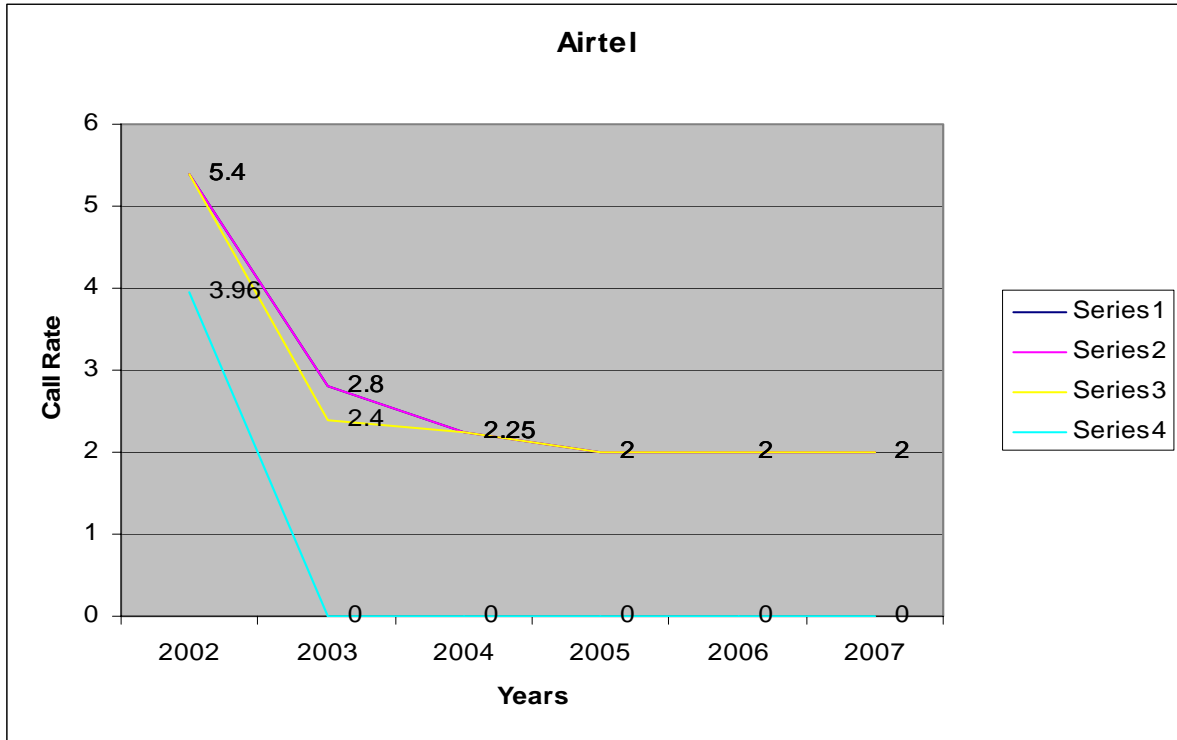
These trends can be seen in the following tables and graphs.

AIRTEL

| YEAR | O/GFIX | O/G WLL | O/GCELLULAR | I/C |
|--------|--------|---------|-------------|------|
| Sep-02 | 5.4 | 5.4 | 5.4 | 3.96 |
| Sep-03 | 2.8 | 2.8 | 2.4 | 0 |
| Sep-04 | 2.25 | 2.25 | 2.25 | 0 |
| Sep-05 | 2 | 2 | 2 | 0 |
| Sep-06 | 2 | 2 | 2 | 0 |
| Sep-07 | 2 | 2 | 2 | 0 |



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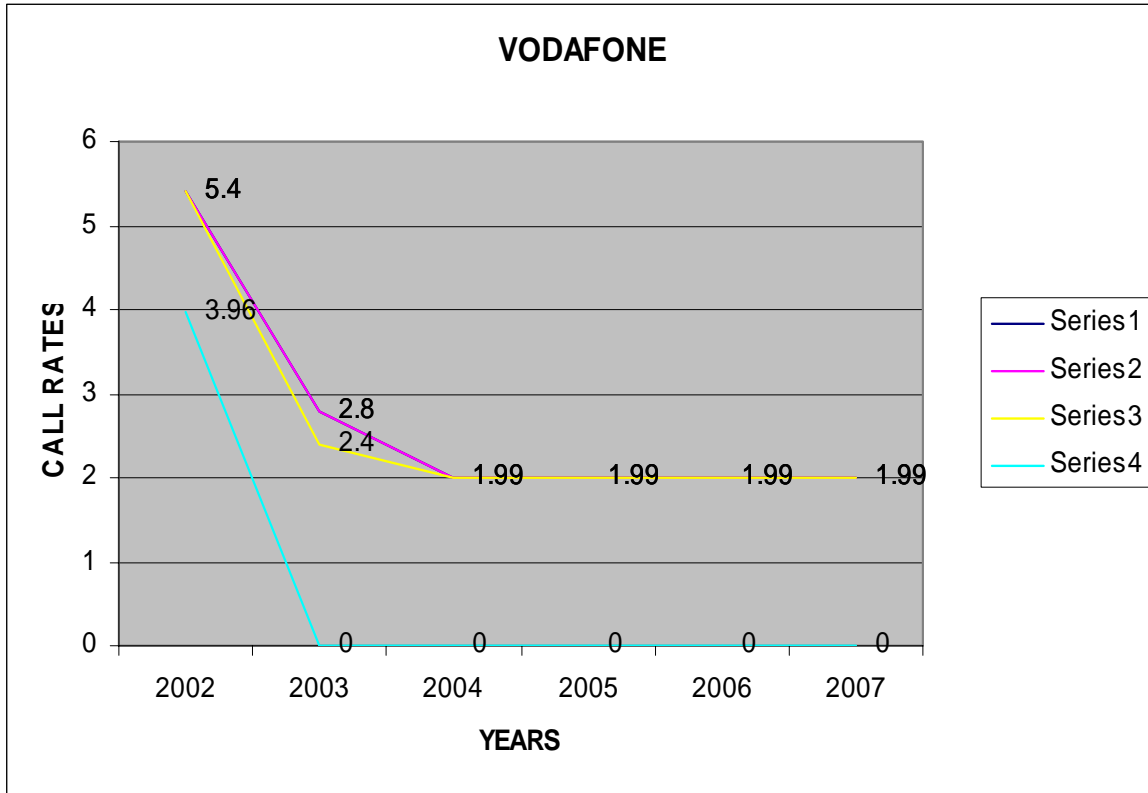


VODAFONE

| YEAR | O/GFIX | O/G WLL | O/GCELLULAR | I/C |
|-------|--------|---------|-------------|------|
| Sep02 | 5.4 | 5.4 | 5.4 | 3.96 |
| Sep03 | 2.8 | 2.8 | 2.4 | 0 |
| Sep04 | 1.99 | 1.99 | 1.99 | 0 |
| Sep05 | 1.99 | 1.99 | 1.99 | 0 |
| Sep06 | 1.99 | 1.99 | 1.99 | 0 |
| Sep07 | 1.99 | 1.99 | 1.99 | 0 |



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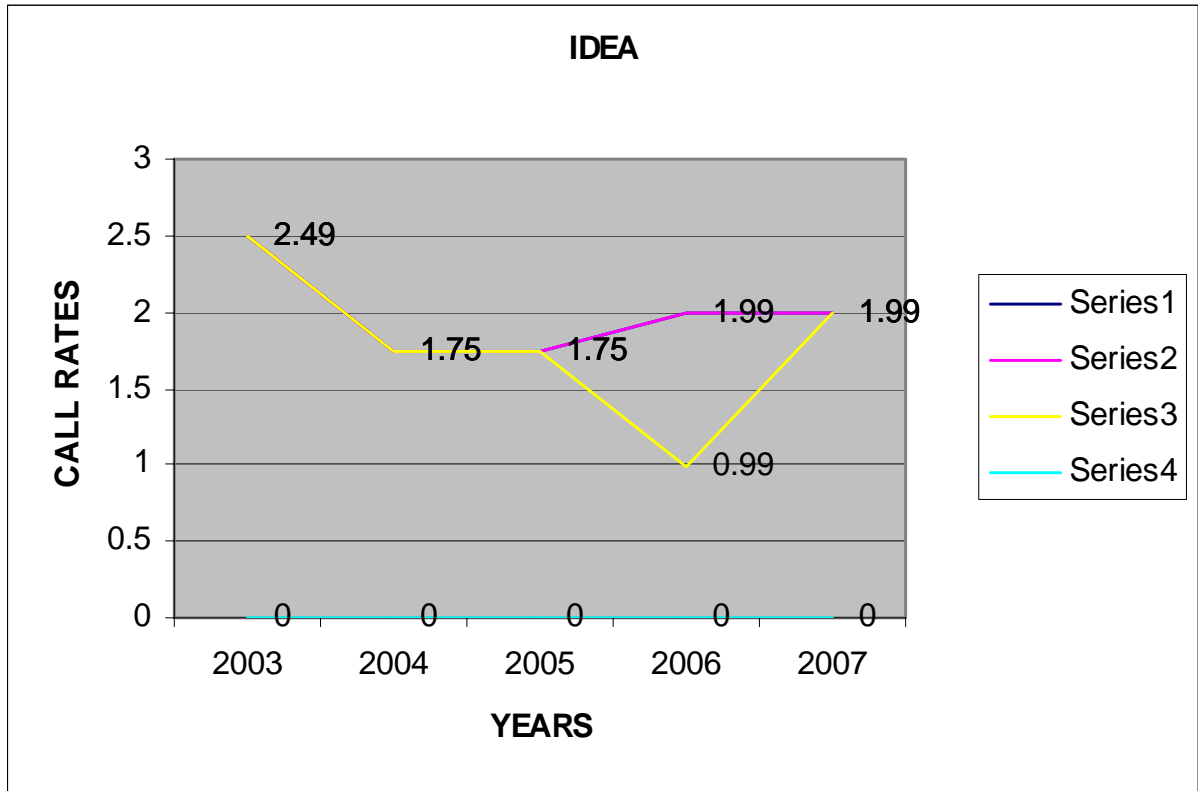


IDEA

| YEAR | O/GFIX | O/G WLL | O/GCELLULAR | I/C |
|--------|--------|---------|-------------|-----|
| Sep-03 | 2.49 | 2.49 | 2.49 | 0 |
| Sep-04 | 1.75 | 1.75 | 1.75 | 0 |
| Sep-05 | 1.75 | 1.75 | 1.75 | 0 |
| Sep-06 | 1.99 | 1.99 | 0.99 | 0 |
| Sep-07 | 1.99 | 1.99 | 1.99 | 0 |



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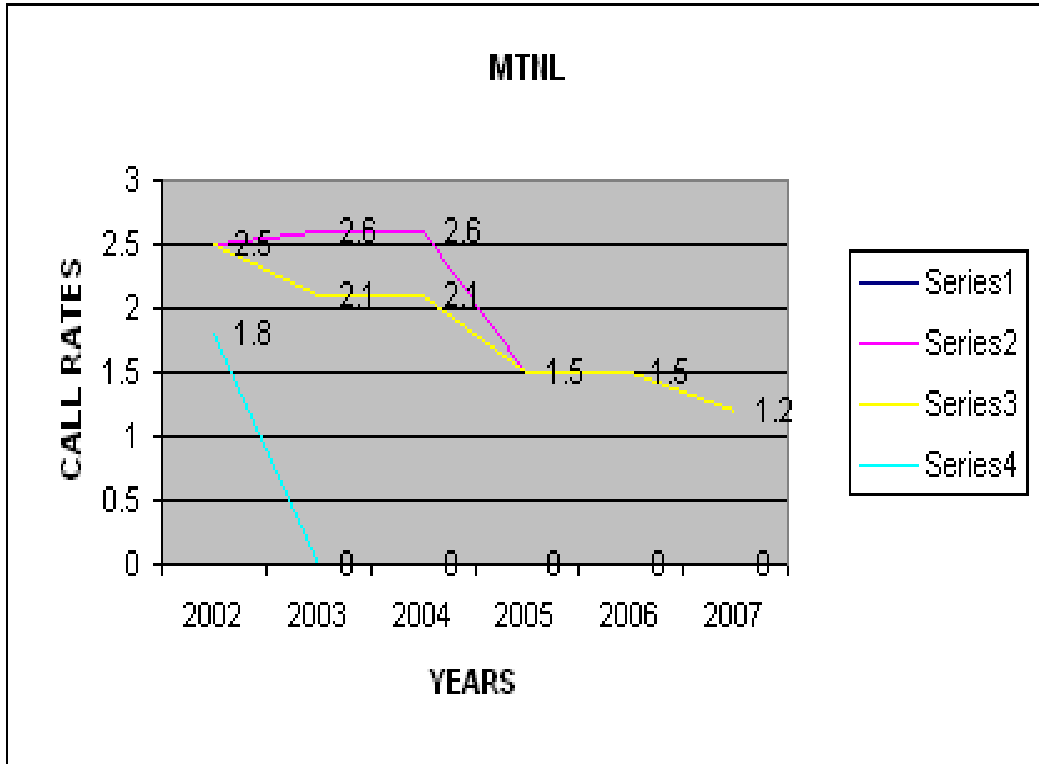


MTNL

| YEAR | O/GFIX | O/G WLL | O/GCELLULAR | I/C |
|--------|--------|---------|-------------|-----|
| Sep-02 | 2.5 | 2.5 | 2.5 | 1.8 |
| Sep-03 | 2.6 | 2.6 | 2.1 | 0 |
| Sep-04 | 2.6 | 2.6 | 2.1 | 0 |
| Sep-05 | 1.5 | 1.5 | 1.5 | 0 |
| Sep-06 | 1.5 | 1.5 | 1.5 | 0 |
| Sep-07 | 1.2 | 1.2 | 1.2 | 0 |



Deregulation and streamlining prices in telecommunication industry in Delhi





Change in service Charges

- In 2002, for Airtel the calling value which a customer used to get on recharges of 300/500/1000/2000/3000 were 78.8/368.8 /843.8/1793.8/2743.8 with validities of 30/30/60 /120/180 days respectively. For Vodafone (Hutch), the calling value which a customer used to get on the recharges of Rs 525/315/350/1050 were Rs 394.05/194.05/227.38/894.05 with validities of 30/30/30/60 days respectively. Idea was launched in 2002 only. In MTNL, the calling values on recharges of 300/500/ 1000/2000 were 250/400/800/1500 with validities of 30/45/100 & 210 days respectively.
- In 2003, the recharge coupons for Airtel were available for Rs 100/300/360/500/1000/3000 & the calling values were Rs 67/ 126/188.33/310/770/2460 with validities of 0/30/30/30/60/365 days respectively. Compared to 2002, both the validities & talk time had undergone a substantial change. Say for instance, Rs 1000 & Rs 3000 recharges talk time(TT) were Rs 843 & 2743.8 in 2002 with validities of 60 & 180 days in 2003, for the same recharge coupons though the talk time has reduced to 770 & 2460 but the validities has increased to 60 & 365 days. For Hutch in 2003, the recharge coupons were available for Rs 108/324 /360/550/1080/1550/2150 & the talk times were Rs 75/150/183 /359/850/1285/1841 with validities of 0/30/30/30/60/90 & 120



days respectively. In 2002, for eg for Rs 350 plan talk time was 227. 38 with validity of 30 days in 2003 for same plan talk time reduced to Rs 183 with validity 30 days.

- But the major difference between 2002 & 2003 is that in the year 2002, the pulse rate was 30 sec & in the year 2003 the pulse rate was increased to 60 sec. so, the minor fall in talk time is offset by the increase in pulse rate. In net terms the consumer had gained in 2003 as compared to 2002.
- For Idea, in 2003 recharge coupons were available for Rs 324 /360/540/1080/3240 with TT of Rs 174/210/390/930/3090 with validities of 30/30/30/60 & 365 days respectively.
- For MTNL the recharge coupons were available for Rs 300/500/ 1000 & 2000 with talk time Rs 250/400/800/1500 & validity of 30/60/120 & 360 days respectively. For MTNL drastic change has come in terms of validity like for Rs 2000 recharge In 2002 validity was 210 days but in 2003 validity was increased to 360 days.
- In the year 2004, for Airtel recharge coupons were available for Rs 55/111/331/368/551 with talk times of Rs 17/67.73/150.36/ 184.94 & Rs 350 with validities of 5/0/30/30 & 30 days respectively. In both the validity & talk time no drastic changes



have come very minor changes came. For Vodafone (Hutch) in 2004, the following recharge coupons were available Rs55/115/220/335/375 with talk time of Rs 17/58/90/154/190 with validity of 0/0/15/30 & 30 days respectively. In Vodafone (Hutch) also no drastic changes have come in both TT & validity but minor changes are there. For Idea in 2004 the following recharge coupons were available 55/110/220/330/360/550 with talk time 19.6/44.82/89.64/149.46/176.68/349.09 with validities of 5/10/15/30/30 & 30 days. So, no drastic changes came compared to 2003. For MTNL, following recharge coupons were available Rs 110/331/551/1102/2204 with TT of 60/240/440/940/2000 with validities of 7/30/60/150 & 360 days respectively. So, no drastic change came compared to 2003.

In 2005, for Airtel the following recharge coupons were available 115/225/335/375/575/998/1150 with talk time of Rs 57.88/75/153.99/190.29/371.78/25/893.56 with validities of 0/15/30/30/30/365/ & 60 days respectively. Compared to 2004, no drastic change came. For Vodafone (Hutch) Rs 55/115/220/335/335/335/375/575/1150 recharges were available with talk time Rs 17/58/90/154/0/215/190/372 & 894 with validities of 0/0/15/30/45/0/30/60 & 60 days respectively. For Idea Rs 115/150/220/335/350/375/575/1150 recharges were available with talk time of Rs 58/81.1/89.64/133.99/157.60/190.29/471.77/893.55 with validity of 0/10/15/30/30/30/30/75 days



respectively. No drastic change in both Vodafone (Hutch) & Idea as compared to September 2004.

For MTNL following recharge coupons were available 110/330/550 & 1100 with TT of Rs 50/200/400 & 800 with validity of 7/30/60 & 150 days respectively minor changes came as compared to 2004.

- In September 2006 for Airtel, the following recharge coupons were available 10/25/50/115/125/200/225/335/345/375/390/575/590/899/1150/3350/3500 & the talk time were 8.91/22.27/44.55/102.46/111.37/47.61/71.29/148.47/177.38/184.11/217.47/362.30/395.66/55/874.59/2684.68/2818.3 with validities 0/0/0/0/30/15/30/30/30/30/30/30/30/30/60/366/366 days respectively.
- In Vodafone (Hutch) the following recharges were available Rs 10/55/115/335/199/350/400/450/600/899/1250/3500 with talk time of 8.91/49/102.46/303.99/46.72/181.83/226.38/150/404.57/550/963/2818 with validities of 0/0/0/0/30/30/30/30/30/30/60/365 days respectively.
- In Idea the following recharge coupons were available Rs 50/115/150/220/249/335/350/375/575/899/1150/3350 with TT of 44.55/102.46/133.64/86.01/0/148.47/161.83/184.11/462.30



/535.17/874.59/2984.68 with validities of 0/0/10/15/30/30/30/30/30/30/75/365 days respectively.

- In MTNL the following recharges were available Rs 100/110/175/225/340/565/900/675/1125/2250 with TT of Rs 89/65/55/250/200/500/550/600/900/2000 with available of 0/7/30/0/30/0/30/60/150 & 360 days respectively.
- The major change come in recharge coupons like for Vodafone in Rs 55 recharge people used to get 17 Rs & 0 validity in 2005 & in 2006 People get Rs 49 with zero validity on the same recharge. So, the talk time has almost doubled with same validity. For Idea in 2005, in Rs 115 plan people used to get Rs 58 with zero validity. In 2006, people get Rs 102.48 with zero validity in the same recharge. So, in case of idea also the talk time almost doubled with same validity.
- For Airtel 2005 on 115 recharge people used to get Rs 57.88 with zero validity in 2006 on same recharge people used to get 102.46 with same validity. So, in Airtel also the talk time almost doubled.
- In MTNL, in 2005 on recharge of 110 people used to get Rs 50 with 7 days validity. In 2006 people get Rs 65 with 7 days validity. In case of MTNL the talk time increased with same validity.



- In 2007, for Airtel the following recharge coupons are available 10/25/55/99/125/200/249/345/390/399/499/590/899/1175/3500 with talk time of Rs 6.40/19.75/43.95/101.25/ 47.42/ 221.85/177.05/217.10/355.49/444.58/395.10/550/895.75/2815 with validities of 0/0/0/30/0/30/30/30/30/30/30/ 30/60 /366 days respectively.
- In Hutch the following recharge coupons are available Rs 10/55/99/115/199/220/348/350/400/450/499/600/899/3500 with talk time Rs 6.40/43.95/10 /92.35/47.11 /47/185/181.5 /226.38/150/344/404/550.02/2814.99 with validities 0/0/30 /0/30/30/ 30/30/30/30/30/30/30/ 366 days respectively.
- In Idea the following recharge coupons are available Rs 10/25/ 50/100/200/250/350/400/500/600/899/2000 with TT of Rs 5.9 /19.75/39.5/74/47.47/100/199.5/256/445/434/535.17/1679 & validity of 0/0/0/0/30/30/30/30/45/45/30/180 days respectively.

In MTNL, the following recharge coupons are available Rs 100/ 110/ 175/ 200/ 275/ 223/ 340/ 565/ 675/ 900/ 1125/ 1785/2250 / 2700 with TT of Rs 89/ 65/ 55/ /250 /100/ 1/ 300/ 650/ 750/ 799/ 1100/ 2200/ /2500/ 3000/ & validity of 0/ 7/ 30/ 0 /30/ 30/ 30/0/ 60/ 30/ 150/ 0/ 360 & 1095 days respectively .

There is almost no or marginal charge in the talk time values & validities of different plans as compared to 2006.



There are a lot of services which are introduced after 1999 in the Indian telecom sector which were not available before. In 1999 with the coming of Telecom Tariff Order (TTO) different plans emerged. Before 1999 only one plan existed.

In recent years, the recharge coupons are available for even Rs 10, 25, 50 (which are top-ups) for people who have validity & want talk time can recharge & get the TT with changing times needs are changing & the telecom companies are doing great efforts to reach the expectations of customers. The following changes are worth mentioning:-

- Life time prepaid card is available for around Rs 500 for Idea, Hutch & Airtel it gives validity for lifetime which was not available before 2004.
- Night chat card is available which has several benefits like calls to the same operator b/w 11 pm-7am at Rs .10/min, local SMS to same operator free & call rates to other GSM players are reduced to Rs .50/min & STD calls at around Rs 1.32.
- Almost all players provide free calls to the same operator for some new recharge of Rs 250 & allowed for 30 days.
- Full talk times on recharges are also available like in Idea's Rs 222, 555 recharges full talk time is available & on MTNL with zero validities (TRUMP) 200 recharge one gets Rs250 & on Rs 675 recharge. One gets Rs 750 with 60 days validities.



- Many caller tunes, ring tones dialer tones are available for customer now a days & many other services are available like cricket updates, movie updates, astrology, one can book tickets through his/ her mobile phone & can get bollywood updates etc.
- Cards like double talk card in Idea, Two to talk in Vodafone & Airtel are very popular. These cards cost about Rs. 69 & provides benefits to the customer who has validity & talk time. The benefits are :
 - Reduces local sms tariff at Rs .20/ SMS local same operator calls at Rs .49/min, STD at Rs 1.32/min, .99/min calls at other both fixed & GSM.
- India's telecom tariffs which are the lowest in the world can fall further by over 50% to about 40paise per minute, reported ET. according to an internal note of the DoT over-age mobile tariffs which are currently at about Rs 1 per min call fall over 50%, If four new players were to enter the fray coupled with the implementation of new norms such as usage of dual technology, number portability & allocation of spectrum to new players & existing operators who want to spread their networks to a pan India scale. Currently only Airtel , Rcom & BSNL have a pan India presence, while Vodafone & Idea are waiting for spectrum to go pan India.



LIMITATIONS OF THE STUDY

- All the Telecom Players have not been taken for the study.
- The study is confined to GSM Players & that too only for Delhi.
- Data gap is another limitation: Data for the years 2000 & 2001 was not available.
- The study analyses only deregulation as a factor for reduction in the call rates & improvement in services. Other factors like the reducing cost nature of Telecom Industry are not taken in to account since it is not possible at this stage to study all the factors leading to reduction of costs.



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