

RECOMMENDATIONS ON UNIFIED LICENSING

As per section 11(1) (a) (i), (ii), (iv) and (vii) of TRAI (Amendment) Act, 2000 the Authority makes the following recommendations:

1. BACKGROUND

1.1 Technological developments are rendering service based divisions of Telecommunications, redundant. Increasingly, the services covered under one license can also be provided under another license due to such developments. Recent examples are several services such as Radio Paging, Audio Text Services, Video Conferencing, Data Services, Video Text Services, Electronic Mail, Voice Mail, etc. These services were identified as independent licensed services under NTP 1994 but have faded due to the technological developments in the services of other licenses.

1.2 This has been happening in the past also but what has changed now is the rate at which the technical developments are taking place. The result is that even before a service licensee has fully realised his investment his activity is threatened or made redundant due to technological development in another area, enabling the other licensee to overlap with the first one. This leads to disputes and often to litigation, and based on a license agreement, an implicit contract, claims are made on Government for providing compensation. There is no justification in continuing a service-wise licensing regime where fast changing technologies will invariably place burdens on the Government in the future. Hence the present licensing regime should be replaced by a unified regime for all services and geographical areas using any technology and leaving it for the service provider to use the best technology at all times. The regime would be best implemented through a license based on an authorisation process as is increasingly becoming prevalent in other countries. Efforts should be made to develop an environment that fosters innovation and technology evolution.

1.3 When technology enables people to avail of or provide a service and licenses prohibit it, there is generally an attempt to breach the licensing regime. The Licensor's/Regulator's first reaction is generally to set enforcers on to users of the service and its providers. This generally leads to further sophistication in the technology that makes policing difficult. We are of the view that the licensing restrictions should not come in the way of technological developments as the artificial restrictions would encourage service providers to find loopholes in licensing regime and they will use technology or loopholes in networks/regulation to by-pass such restrictions. One such recent case is the mobility under WLL(M) where the limited mobility within SDCA, granted to the operator has been converted into almost an All-India roaming by the operator registering the subscribers almost all over the country by using call-forwarding and multiple registration. Such aberrations lead to disputes and litigation which hamper the growth of telecommunication sector. Ultimately no one gains, since the ability of the technology should not have been restricted in the first place by means of a technology neutral license.

2. Evolving Convergence Scenario in telecommunication services

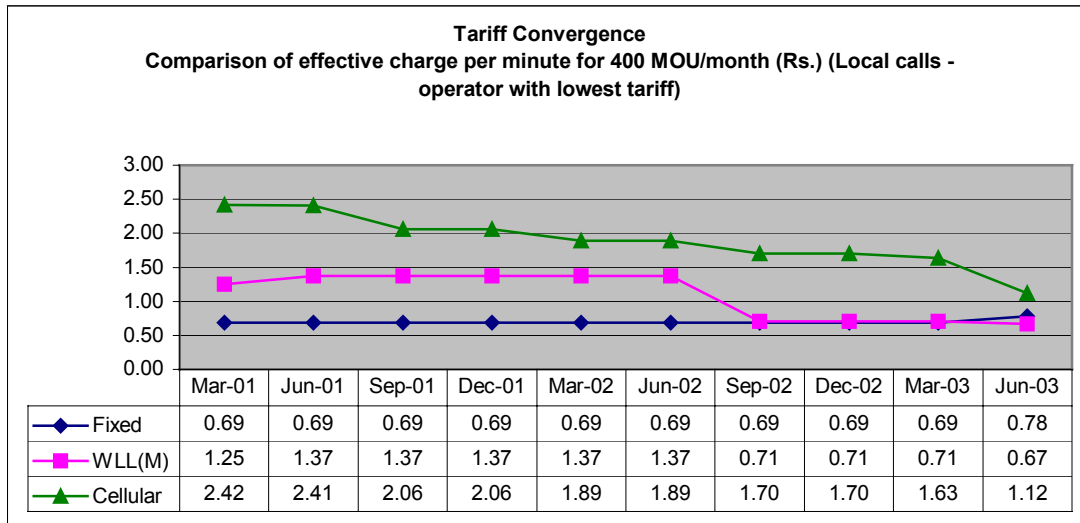
2.1 Convergence in "carriage" of telecommunication has been evident for some time. This has occurred due to convergence of media on one hand and development of IP based transmission in digital format for voice, data and video on the other. The ability to provide access to a subscriber for voice, data and video by a variety of media such as wire-line, wireless and cable TV was recognised while formulating NTP 1999 and accordingly a category of "Access Provider" was created. Further technological developments and competition resulting in falling tariffs have created a situation where product substitution is now possible using a variety of media. Tariffs dropped by more than 50% with the entry of WLL(M) players in early 2003. With the reduction of mobile tariffs, fixed and mobile phones are increasingly becoming substitutable products. Market growth has accelerated from around 3 lakhs subscribers per month in May 2002 to almost 2.26 million subscribers per month in May 2003. This phenomenon can be seen in the table below:

Addition to Mobile telephones (April to September 2002 & 2003)

(in million)

| Year | April | May | June | July | August | September | Total in (Apr-Sept) 6 months |
|------|-------|------|------|------|--------|-----------|------------------------------|
| 2002 | 0.28 | 0.29 | 0.35 | 0.36 | 0.49 | 0.37 | 2.14 |
| 2003 | 0.64 | 2.26 | 1.42 | 2.28 | 1.81 | 1.88 | 10.29 |

2.2 The convergence and falling trends of tariffs are shown below:



Further, as the distinction between mobile and fixed services blurs, the traditional approach to regulating the telecom industry by partitioning it and regulating individual segments has become ineffective. Developments in consumer behaviour and technology, and flattening scale curves have rendered this approach antiquated and counter-productive. The introduction of Voice Over IP (VOIP) has led to death of distance and blurring of the boundaries such as access network, national long distance network and international long distance network. Once technology stabilises, VOIP may be the biggest challenge to the current telephony, leading to protracted litigation/compensation demands in the telecommunication sector much severe and larger than in the current WLL/Cellular case. Such eventualities need to be avoided by migrating

to unified regime where the operator is always free to use the best service and technology route.

2.3 As per NTP'94, the telecom infrastructure is technology intensive. It is, therefore, necessary that the administration of the policy in telecom sector be such that the inflow of technology is made easy and India does not lag behind in getting the full advantage of emerging new technologies. As per the policy of Government of India, it is necessary to make suitable arrangements so as to protect and promote the interests of consumers, allow access to best and cheapest technology to consumers and to ensure fair competition among various service providers.

2.4 After NTP'94 when the Basic and Cellular Services were opened for participation of Private sector, there was a restriction that one single company may not get license in more than three category 'A' and category 'B' circles. Initially the decision of the Government was not to permit licenses to be awarded across the country to one single entity. The case of Delhi Science Forum and others Vs UOI which went to Supreme Court is well known. This right as well as decision of the Government was upheld by the Supreme Court. However, as things stands today, in view of the need to maintain adequate competition as well as to enable viability of the operations of the companies and to build up economies of scale, the Government has allowed entities to have more than three licenses across the circles and many operators have now built almost an All India coverage. This shows that the Government, at various times, has modified its decisions in a fast changing scenario and also the mode and method of implementing the objectives set up in its policy. The Licensor took these steps to continuously fine tune these arrangements to ensure that they subserved the end objectives. In fact, the last paragraph of NTP'94 left it to the Government to devise suitable arrangements to implement the policy in a manner that protected and promoted the interests of consumers and ensured fair competition. Subsequently, the migration of Basic and Cellular Operators to a new revenue share regime implemented in NTP'99 reduced the license fees, eased the burden of heavy fixed fee that the operators had bid and opened opportunities for huge growths in the sector that we presently witness, which the earlier regime would never have allowed. Due

to NTP'99 we today witness a win-win situation that due to huge and unexpectedly large subscriber growth the income to the Government in the form of revenue share in a year is more than that would have been with the fixed annual license fee which was bid by the operators.

2.5 Paragraph 1.3 of the NTP'99 is reproduced below:

“In addition to some of the objectives of NTP 1994 not being fulfilled, there have also been far reaching developments in the recent past in the telecom, IT, consumer electronics and media industries world-wide. Convergence of both markets and technologies is a reality that is forcing realignment of the industry. At one level, telephone and broadcasting industries are entering each other's markets, while at another level, technology is blurring the difference between different conduit systems such as wireline and wireless. As in the case of most countries, separate licences have been issued in our country for basic, cellular, ISP, satellite and cable TV operators each with separate industry structure, terms of entry and varying requirement to create infrastructure. However, this convergence now allows operators to use their facilities to deliver some services reserved for other operators, necessitating a relook into the existing policy framework. The new telecom policy framework is also required to facilitate India's vision of becoming an IT superpower and develop a world class telecom infrastructure in the country. “

This statement highlights the recognition by the Government even in 1999 of the reality that technological innovations were sweeping the entire world and the difference between different conduit systems such as wireless and wireline were blurring. It also recognised that the old frame-work specified in NTP'94 was inadequate and/or no longer suited to the developments that had occurred since then. Convergence of not only technologies but also markets was a reality that was forcing re-alignment of the industry.

2.6 Clause 3.1 of NTP'99 defined the Cellular Mobile Service Providers, Fixed Service Provider and Cable Service Providers as access providers. The identification of these service providers in Clause 3.1 as access providers was not an end by itself. It was only the means to achieve the end. To that extent, therefore, highlighting the different service providers in the manner done in Clause 3.1 of NTP'99 can never be deemed to be cast in stone. To claim that NTP'99 perpetuated, with deliberation, the sector specific segmentation evolved in the 1994 Regime would be a complete misconstruction of this Policy

document. A Policy document does not detail all the terms of licence. Therefore, to the extent that this document makes reference to various service providers, that reference can never mean that it is identifying the broad aspect by which each of these service providers would be governed.

2.7 Para 1.3 of NTP'99 recognised that Convergence of both markets and technologies is a reality that is forcing realignment of the industry and Convergence now allows operators to use their facilities to deliver some services reserved for other operators, necessitating a review of the existing policy framework. Para 3.1 however, stipulated service specific licensing. Evidently, market conditions at that point of time forced service specific licensing. Para 9 of NTP'99 envisaged that due to substantial changes in the existing telecom sector, Indian Telegraph Act (ITA 1885) and Indian Wireless Act, 1933 need to be replaced with a more forward looking Act.

2.8 As per TRAI Act, the Authority has to regulate the Telecommunication Services so as to protect the interests of service providers and consumers of the Telecom Sector, to promote and ensure orderly growth of the Telecom Sector. Further, as per Clause 11 (1) (a) (iv) and (v), TRAI has to make recommendations on the following: -

11(1) (a) (iv): "measures to facilitate competition and promote efficiency in the operation of telecommunication services so as to facilitate growth in such services."

11(1)(a) (vii) : " measures for the development of telecommunication technology and any other matter relatable to telecommunication industry in general."

Obviously, growth and facilitating technological development of the sector, which would inevitably reduce tariffs for the consumers, have to be the foremost concerns of the Regulator.

2.9 Under Unified Licensing Regime in effect number of service providers offering telecom services may change, therefore, Clause Nos. 11(1) (a) (i) & (ii) of TRAI (Amendment) Act, 2000 dealing with the issues “need and timing for introduction of new service provider” and “terms & conditions of license to a service provider” respectively also become relevant in this context. The relevance of new service providers offering cellular mobile services has to be seen from the angle of growth of wireless subscribers and the likely market size of about 100 million wireless subscribers by December, 2005 as brought out in Para – 6 subsequently.

2.10 Convergence Bill handled both carriage and content aspect of communications. Convergence of access media has already been discussed in NTP’99. Thus, the convergence phenomenon has already matured in carriage i.e. the telecom sector. Handling of convergence of both carriage and content is raising certain issues which is delaying the Convergence Bill becoming an Act. Therefore, unification of carriage, i.e., telecom sector is being considered and recommended, ahead of the Convergence Bill. The Standing Committee on IT (2002) also concluded that convergence is already a reality and left to the Government and ultimately the Parliament to take a decision on the Convergence Bill. Unified License is an approach in that direction.

3. Falling Costs of Wireless Communication and the changing capabilities of various media

Wireless rollout costs have been falling and on date these are significantly lower than wire-line almost in the proportion 1:3. While the bandwidth capabilities of wireless access have been rising, the use of DSL (Digital Subscriber Loop) technologies has enhanced the capabilities of copper lines. In fact, the quality of wire-line access with fibre to the building (FTTB) deployment and complimentary use of wireless (Wi-Fi) technology is seen as a powerful and more reliable solution to business requirements than purely wireless based solution available on date. On the other hand, purely wireless

access has become the most attractive access arrangement for the common man and once mobility is added to it, it becomes by far the most attractive alternative. Technological developments over the past few years have made the mobile wireless phone, the phone for the common man from the earlier image of a phone for the elite. Of course, increasing and intense competition leading to reduced tariffs and falling capital costs have also contributed to this phenomenon. Marginal subscribers or the masses find wireless mobile phone far more attractive than the wire-line phone. A number of studies have also shown that, even with the reduced tariffs, the mobile services have large margins for expanding the range of services to the increasing number of subscribers.

4. International Practices

To accommodate evolving changes due to technological developments in telecommunications, internationally a clear trend towards movement away from service specific licensing and towards Authorisation or Converged licensing is emerging. In Australia, there is a 'No licensing regime' for telecommunications. Only registration and compliance to prescribed guidelines is required. All services in all geographical areas could be provided under this registration. Service providers are not subjected to any licensing requirements but are required to comply with a range of obligations. Spectrum is allocated separately. In Singapore, a Unified-licensing framework has already been implemented. The basic intention of the framework is to have a common license for all networks/services the operator intends to operate/offer. The licensees have been categorised into Facilities based Operators (FBOs) and Service Based Operators (SBOs). In Malaysia, the converged licensing has been implemented and the framework permits that communications infrastructure can be used to provide any type of communications service that it is technically capable of providing. There are four categories of licenses viz. Network Facilities Providers, Network Service Providers, Application Service Providers and Content Application Service Providers, for all telecom services.. In Europe, the European Parliament and the Council gave a set of five directives to its Member States so as to provide for a single Regulatory

framework for all transmission network and services. The directive dated March 7, 2002 on the Authorisation of electronic communications networks and services recognizes that

“ 2. Convergence between different electronic communications networks and services and their technologies requires the establishment of an authorization system covering all comparable services in a similar way regardless of the technologies used.”

Article 3 (General authorisation of electronic communications networks and services) of the Directive requires

“2. The provision of electronic communications networks or the provision of electronic communications services may, without prejudice to the specific obligations referred to in Article 6(2) or rights of use referred to in Article 5, only be subject to a general authorization. The undertaking concerned may be required to submit a notification but may not be required to obtain an explicit decision or any other administrative act by the national regulatory authority before exercising the rights stemming from the authorization. Upon notification, when required, an undertaking may begin activity, where necessary subject to the provisions on rights of use in Articles 5,6 and 7.”

The Service specific licenses will be replaced by authorizations in the EU Countries. A separate authorisation for frequencies is, however, required. For the use of Radio Spectrum, grant of numbers and rights to install facilities the relevant authorities may impose separate fees. Specifically, in case of spectrum Member States can grant such rights on the basis of selection criteria, which must be objective, transparent, non – discriminatory and proportionate.

In U.K, OFCOM the new telecom and broadcasting regulator has been set up and a new Communication Act is in place. The new regime abolishes the requirement for licensing. It is consistent with the EU directive concept, which states that persons wishing to provide electronic networks and services should be free to do so without having to obtain prior permission, subject only to giving

notification to the Licensing and Regulatory Authority and subject to compliance with applicable obligations. Countries like Denmark have already abolished the licensing regime. The Executive Order No. 786 of 19th September 2002 does not require a service provider to obtain a license to offer telecom services. Details of the various countries are given in Annexure I.

5. Prospects in India

5.1 The fast changing technologies have made it mandatory that like other countries we also move to a unified licensing based on the concept of “authorisation” and total elimination of service based licensing. In case we fail, the sector will face more litigation with faster pace of change in technology.

5.2 Owing to technological developments, reduction in cost of wireless technologies, quicker rollout and the need to increase tele-density at a fast pace, TRAI felt that there was a need for review of the licensing regime. Accordingly, a Consultation Paper No.3/2003 on Unified Licensing for basic and cellular services was issued on July 16, 2003. This consultation was limited to access network since in the Authority’s perception enhancement of the growth of tele-density needed immediate attention and could be delivered by concentrating on the unification of access services. Comments of all the stakeholders were invited on the issues raised in the consultation paper. The Authority received comments from various stakeholders that the scope of the Unified License proposed in the Consultation Paper should be extended to include services such as National Long Distance (NLD), International Long Distance (ILD), and Internet Services. The Authority had not included these services in the Consultation paper because of the following reasons :

- i) The service areas for NLD, ILD, and Internet, etc. services are nation wide as against circle for basic and cellular services.
- ii) NLD and ILD services were recently opened for competition.

- iii) Due to the reasons mentioned above, the implementation of Unified Licensing for all these services could be a more complex and time consuming process.

5.3 Based on the comments received, the Authority clarified (an addendum dated August 4, 2003 was also issued in this regard) that it is willing to consider all suggestions made in the process of consultations, and would welcome viable proposals for any such issue. Open House Discussions were held in Delhi and Hyderabad on 17th and 19th September 2003. In the Open House Discussions, most of the stakeholders supported unified license and also opined that the scope of the Unified License should be extended to include services such as National Long Distance (NLD), International Long Distance (ILD), and Internet Services. However, no viable proposals were received in this regard.

5.4 The cellular operators/COAI/few consumer groups mentioned that they are not in favour of the Unified Regime. CMSPs/COAI mentioned that the CMSPs have contractual rights under the policy/their licenses and basic license should not be merged with CMSPs license to eliminate the concept of limited mobility. They apprehended that the real *raison d'etre* of the consultation exercise was to legitimize WLL(M) as a full cellular mobile service. In consideration of the acceptance by the licensee, of the terms and conditions contained in the offered migration package, for migration to the revenue sharing regime under, NTP'99, the CMSP license agreement was amended as follows :-

“The Licensee shall forego the right of operating in the regime of limited number of operators after 01.08.1999 and shall operate in a multipoly regime, that is to say that the Licensor may issue additional licenses for the Service without any limit in the Service Area where the Licensee Company is providing Cellular Mobile Telephone Service.”

This implies that CMSPs at the time of migration to revenue share regime had accepted a multi-poly regime. The restriction on the number

of CMSPs by licensor due to limitations of availability of spectrum at a particular time should not be claimed as a contractual right.

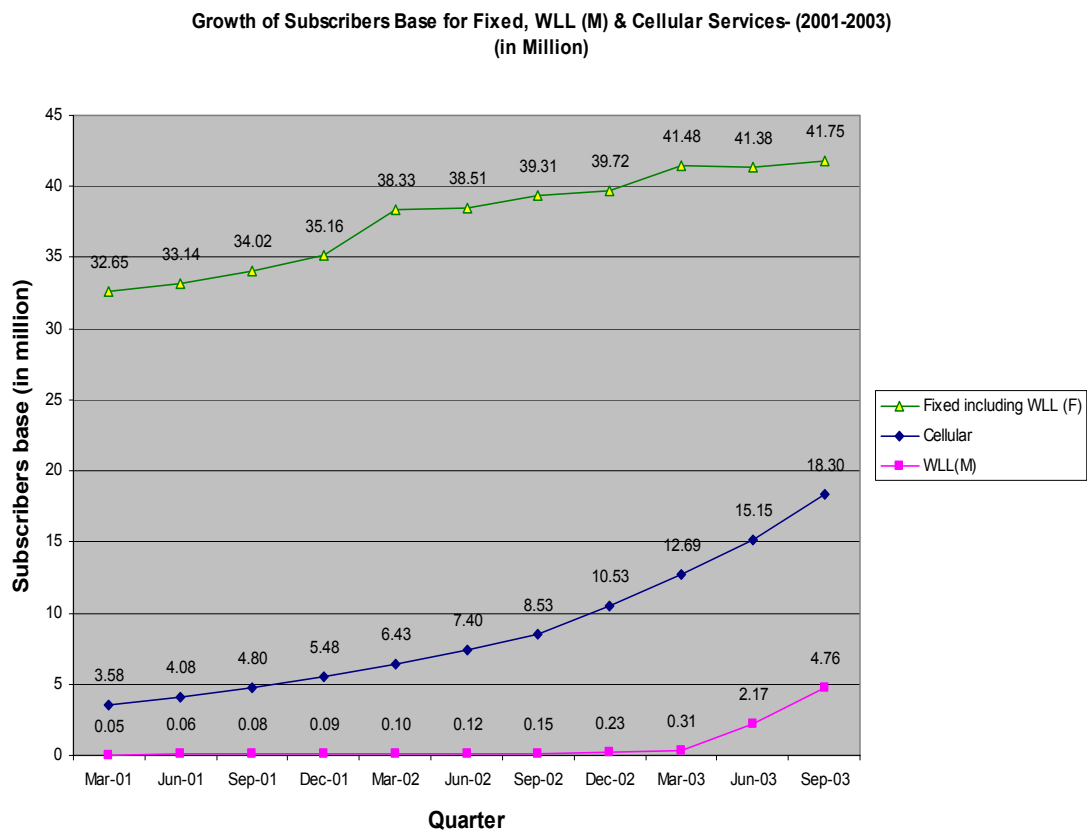
- 5.5** Basic Service Providers/ABTO/Consumer groups mentioned that they are in favour of Unified licensing regime. Most of the stakeholders mentioned that a level playing field should be maintained and the interests of all Service providers and consumers should be taken into consideration.
- 5.6** Another issue raised in the consultation process was about the benefits to consumers and operators. Apart from, the benefits like common consumer bill, common customer care etc. one of the main reasons for implementing unified licensing is to evolve a process in which service specific licenses are abandoned at the earliest. As mentioned earlier, technological developments lead to a situation wherein one service provider may offer the services which are licensed for another service provider and this leads to a disputes and litigation. The litigation free environment always helps faster growth in telecom services, which in turn, because of the competition and larger volume of traffic, benefits the consumers.
- 5.7** It has to be recognised that fast changing technologies and blurring boundaries between different services have forced different countries to move towards converged licensing/authorisation. This was the main rationale for introducing unified licensing in most countries and Unified Access Licensing was likewise proposed in the Consultation Paper, as the first step towards such unification.

6. Growth of telephone density – national objective and priority

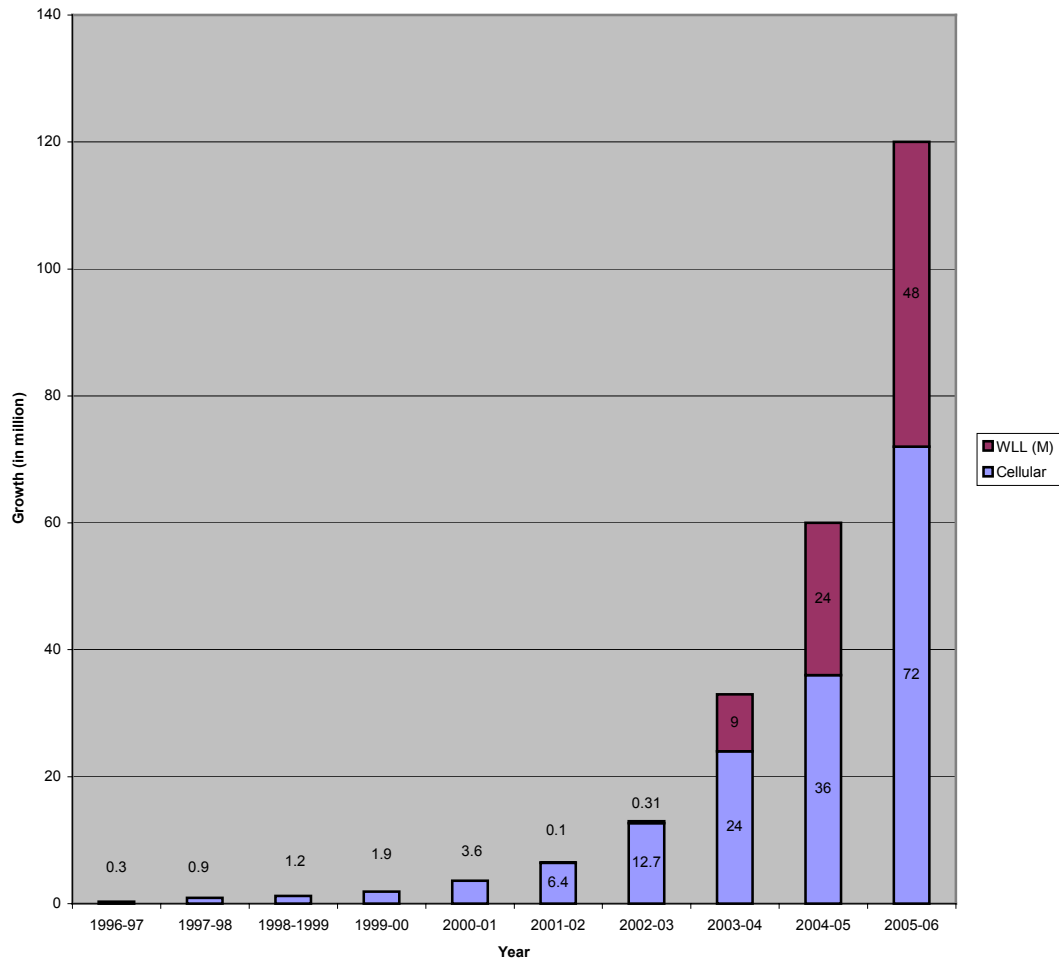
6.1 The new economic policy adopted by the Government aims at improving India's competitiveness in the global market, attracting foreign direct investment and stimulating domestic investment. Telecom services of world-class quality are necessary for the success of this policy. It is, therefore, necessary to give the highest priority to the development and modernisation of telecom services in the country.

6.2 Formulation of telecom regulatory environment and strategy has to be based on the single priority of the moment, viz. increasing the availability of phone connections at affordable costs and tariffs and ensuring fast roll out of services. Growth of tele-density revolves around access networks and need to make available low cost access.

6.3 In March, 2003, the wireless subscriber base was 13 million, which has almost doubled in last seven months. The phenomenal growth of wireless subscribers and possibilities for the future are shown in the figures given below:



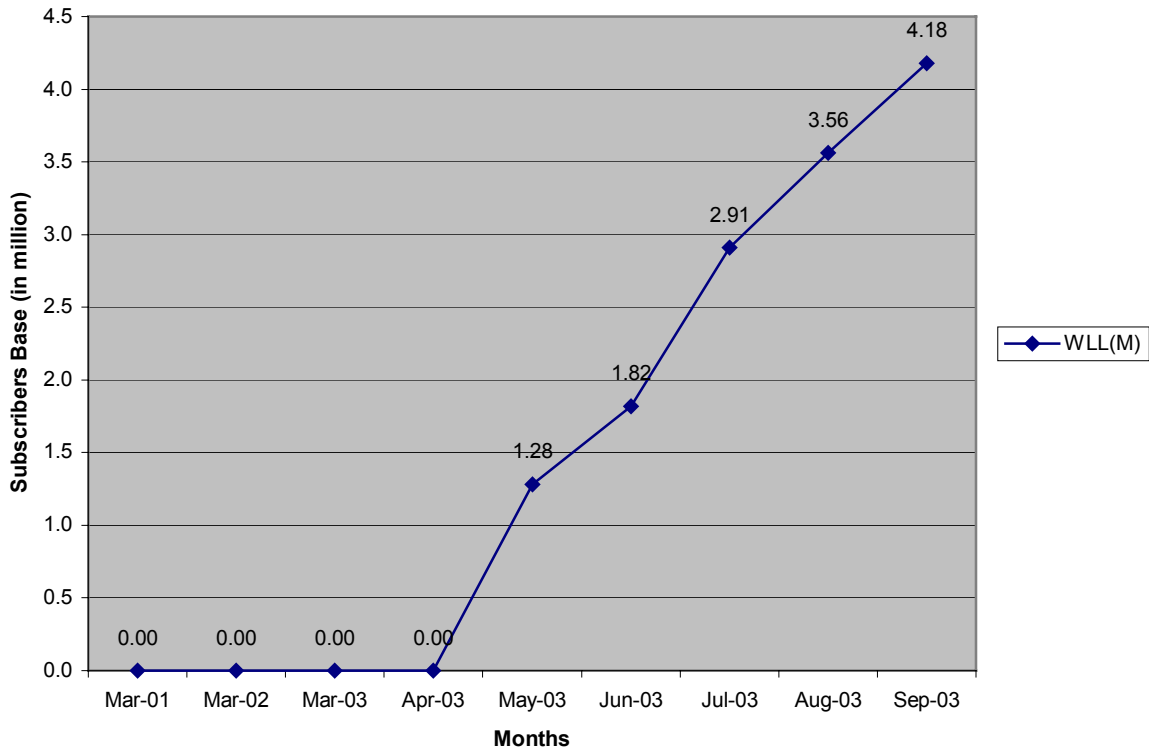
Growth of cellular & WLL (M) (1996-2006)



With this growth continuing, the expected wireless subscriber base by December, 2005 will be 100 million, provided the sector is litigation free and there is an intense competition between players with reduced tariff rates. A perusal of graphs and tables in Para 2 & 6 would clearly reveal that the growth has multiplied manifold only after intense competition started between cellular and WLL and also the 3rd Mobile Operator and the consequent fall in tariffs.

The growth of subscribers of one WLL Operator as shown below, also indicates the huge potential in the market. Of course, level playing field must be ensured.

**Growth of WLL (M) Subscribers Base
(in Million)**



6.4 In fact even much higher growth than the existing one is sustainable if we look at the example of our neighbouring country, China.

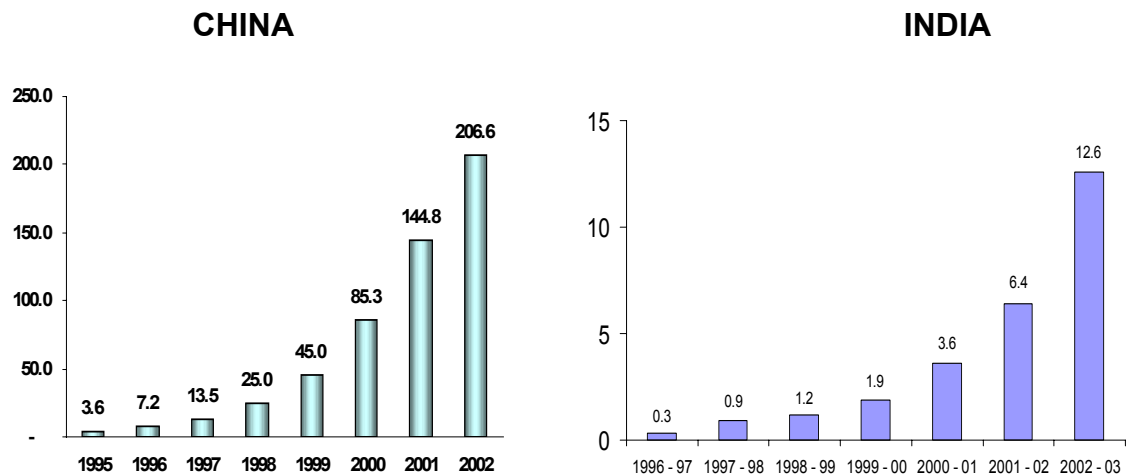
Before looking into telecom statistics let us have a look at the demographic comparison of the two countries which is shown below:

China India comparison - demographics

| emographic indicators | China | India | China/India X |
|---|-------|-------|------------------|
| Population (Billion) | 1.30 | 1.05 | 1.2 |
| Average persons per household | 3.7 | 5.3 | |
| Households(Million) | 345 | 198 | 1.7 |
| Urbanisation | 37 | 28 | |
| Personal disposable income (USD per capita) | 492 | 368 | 1.3 |
| Passenger cars (per 1000)population) | 7 | 5 | 1.4 |
| Two-wheelers (per 1000 population) | 26 | 29 | 0.9 |
| Gini index | 0.4 | 0.38 | |

If the number of two-wheelers, passenger cars, personal disposable income and Gini Index of two countries are almost comparable then there is no reason why the number of mobile phones also in two countries cannot be in comparable range. It also needs to be recognised that the total number of automobiles in India is 62 million and mobile phones are now within reach of even non-automobile owners, the number can soon explode to 100 million, thus making the working class far more efficient than it is today, having huge implication on the GDP growth of the country.

Growth of Mobile phones in India and China is shown in the following graph :



One of the important reasons of this higher growth of mobile telephones in China is lower tariff as shown in the following table. As of now, since the tariff has fallen even lower than China, India will also achieve exploding growth in Mobile Services

| Year | China | India |
|---------------|-------|------------|
| 1999 | 4.31 | 6.82 |
| 2000 | 4.17 | 6.42 |
| 2001 | 3.51 | 4.68 |
| 2002 | 3.02 | 3.67 |
| December 2002 | 3.02 | 2.71 |
| 2003 | N.A. | Below Rs.2 |

| | China | India |
|-----------------------------|-------|-------|
| ARPU (USD p.a.) | 144 | 138 |
| Per capita GDP (PPP) (USD) | 4670 | 2620 |
| ARPU as % of per capita GDP | 3.1% | 5.3% |

6.5 To achieve 100 million wireless subscribers (cellular & WLL both) the required investment is of the order of Rs.50,000 crores. We are of the view that the size of the cake is big enough for both cellular and WLL operators to co-exist. Litigation free sector is a pre-requisite to achieve the targets. As per the data on Consolidated Sanctions, Disbursements and Outstandings of CMSPs, from the Indian Financial Institutions viz. IDFC, IDBI, ICICI, IFCI and SBI, the position is as follows

Rs. In crores.

| Service Provider | Sanctions | Disbursements | Outstanding |
|-------------------------|------------------|----------------------|--------------------|
| CMSPs | 8480 | 4071 | 2664 |

As per above data the outstanding amount is 65% of disbursed amount.

The main issue of concern is that the required Investment for meeting the demand of 100 million wireless subscribers is around Rs. 50,000 crores. It is clear that both cellular and WLL operators have huge growth potentials and both can participate in the huge task of nation building. In fact, this highlights a need at present itself for greater efforts by existing and new service providers to expand the investment and to meet the market demand for telecom services and help achieve the objectives of telecom growth and development in the country

7. Recommendations on Unified Licensing :

Ambit of Unified Licensing.

7.1 Considering the vision of Government of India through various policies (e.g., NTP'94, 'NTP 99, Convergence Bill), technological development, market trends, international trends, the need to accelerate growth of telephone density, public interest and for the proper conduct of the Service/telegraphs, it is recommended that within six months "Unified Licensing" regime should be initiated for all services covering all geographical areas using any technology. The Regime would be finalized through a consultative process, once 'in-principle' approval is received from the Government. The initiation of the Unified Licensing

process means that TRAI would submit its recommendations on this issue to Government of India. This Unified Licensing regime would be implemented through automatic Licensing / Authorisation subject to notification to Regulatory Authority and compliance with published guidelines (by the operator), thereby removing barriers to facilitate growth in the sector.

- 7.2 The Guidelines would be notified by the licensor based on TRAI recommendations to include nominal entry fee, USO, etc. The charges for spectrum shall be determined separately. The operator shall be required to approach the licensor mainly for spectrum allocation. Since, spectrum is a scarce resource, it needs to be regulated separately. Spectrum should be distributed using such a mechanism that it is allocated optimally to the most efficient user.
- 7.3 The choice of area/service would be left to the operator.
- 7.4 Before migration to Unified Licensing/Authorisation, the guidelines would have to be prescribed after consultations with various stakeholders so as to protect the interests of existing operators and to handle competition related issues.
- 7.5 Some stakeholders have raised the point that the international practices highlighted in the Consultation Paper are not exactly applicable in Indian conditions because unified licensing in these countries covers all telecom services and is not confined to only basic and cellular services. Para 5.2 explains the reasons for issuing the Consultation Paper for unified (access) licensing for basic and cellular services and subsequent amendment to include NLD, ILD and Internet services. The main difference in India and other countries mentioned in the Consultation Paper is that the latter have licenses which cover the whole country. Therefore, the service areas being same for all services, unification for all services is easier. TRAI has recommended initiation of unified licensing for all telecom services within six months. The main point of concern here is that while various countries have already migrated or are migrating to the concept of unified licensing, its method of

implementation could be different in different countries depending on the stage and prevailing conditions from which the unification begins.

- 7.6 It is recommended that the ultimate objective of the Unified Licensing/Authorisation regime be achieved in a two-stage process. Since growth of tele-density – the primary and immediate national objective – revolves around access network and the need to make available low cost access, it is recommended that the unification of access services at circle level be taken up immediately for which consultations with various stake holders have already been completed. This should be immediately followed up with steps to define the guidelines and rules for fully unified license/Authorisation regime by gathering details of International practices and the consultation process.
- 7.7 Existing operators would have the option to continue under the present licensing regime (with present terms and conditions) or migrate to the new Unified Access Licensing Regime in the existing circles.
- 7.8 In the Unified Access Licensing Regime, the service providers may offer basic and/or cellular services using any technology. Existing BSOs may offer full mobility in the circle under the Unified Access Licensing Regime. Existing CMSPs could offer limited mobility facility at appropriate tariffs through concepts such as home zone operations, etc. For migrating BSOs, they would be required to continue the limited mobility service for such class of consumers, who so desire.

Service Area

- 7.9 The service areas for Basic and Cellular Mobile Service differ to some extent. In the case of Basic Services, three metros, i.e., Mumbai, Kolkata and Chennai are respectively part of Maharashtra, West Bengal and Tamil Nadu circles, but these Metros have been licensed as separate service areas for cellular mobile services for historical reasons.
- 7.10 The service area in the Unified Access Licensing Regime would be the service area of the present Cellular Service providers.
- 7.11 Three metros, i.e., Mumbai, Kolkata and Chennai which are at present part of Maharashtra, West Bengal and Tamil Nadu circles respectively

for BSOs, would be separate service areas under Unified Access Licensing regime similar to existing cellular mobile services. Delhi Service area for service providers including MTNL under Unified Access Regime would include Gurgaon, Faridabad, Noida and Ghaziabad. Existing BSOs who migrate to unified licensing regime would send their request to the Licensor for authorisation/automatic licensing for service areas as per existing CMSPs (Both Metros and Circles).

Entry Fee, Rollout obligations and Performance Bank Guarantee

- 7.12 Existing Entry Fee: Annexure-II shows the entry fees paid by different service providers. Three different categories of entry fees are considered. One, for the first six Basic Service Operators and the initial forty-two private CMSPs. The entry fees paid by them before migration to revenue sharing arrangement, w.e.f. 1.8.1999 have been separately indicated. Second, for other basic service providers, the entry fees paid as per DOT's guidelines have been indicated. For other CMSPs (4th Cellular Operator), the entry fee as decided through a multi-stage bidding process has been indicated.
- 7.13 Existing Rollout Obligations: BSOs have different roll out Obligations not only among Pre and Post NTP'99 BSOs but also when compared with CMSPs. While a post NTP'99 BSO in a Service Area is required to provide POPs in all SDCAs within 7 years and that too in an identified ratio of Urban, Semi-Urban and Rural SDCAs, the roll out obligation of CMSPs is to cover 10% of DHQs in the first year and 50% of Districts head quarters in first three years. CMSPs are allowed to cover any town in lieu of DHQ in that District
- 7.14 Existing Performance bank guarantee(PBG): PBG for Basic Service Operators is about 4 times the entry fee paid by Cellular Mobile Service Providers and is linked to roll-out obligations spread over 7 years. For basic service operators the minimum Performance Bank Guarantee (PBG) is Rs.4 crore for the A&N circle and goes up to Rs.460 crores in

Maharashtra circle. For CMSPs the performance bank guarantee is Rs.20 crore, Rs.10 crore and Rs.2 crore for category 'A', 'B' and 'C' circles.

Recommendations on Entry Fee, Rollout obligations and Performance Bank Guarantee:

- 7.15 To decide the benchmark for the entry fee for Unified Access Licensing Regime three alternatives could be considered which are discussed in the subsequent paragraphs.
- 7.16 The first alternative could be inviting bids from existing operators as well as from the new prospective Unified Access Licensing Operators. This is possible since additional spectrum is now being made available by Ministry of Defence and the existing contractual commitments to existing cellular and WLL players can easily be met, leaving out a balance for more players. The benchmarks fixed through this process will be up-to-date based upon the current market situation and will be done through a transparent process. The problems associated with the bidding process are as follows :
- i) The fixing of the benchmarks through a bidding process could be more time consuming and hence delay the implementation of Unified Licensing.
 - ii) While inviting bids the question will be whether it should be done with spectrum or without any spectrum, i.e. only for migration to Unified Licensing Regime. If the bids are invited without spectrum, the new prospective Unified Licensing operators will not be able to roll out their wireless services in the absence of spectrum. If the separate bids are invited for Unified Licensing and spectrum, the bidding process will become even more time consuming and complicated. In case additional spectrum is given for Unified Licensing operators, the existing operators, while migrating to Unified Access Licensing Regime, may also demand additional spectrum

which may not be available immediately. This will stall migration to the Unified Access Licensing Regime.

- iii) Unless the revised spectrum pricing and allocations guidelines are finalised, there is no guarantee that the spectrum would be made available to existing operators willing to migrate to the Unified Licensing Regime.

Considering all these problems, the Authority is of the opinion that the bidding process for fixing up of the benchmarks for migration to Unified Licensing Regime may not be preferable.

7.17 The second alternative could be that basic service operators willing to migrate to Unified Access Licensing Regime should pay the difference in entry fee of average of 1st and 2nd cellular operators and entry fee paid by Basic Service Operators. This argument is not sustainable due to the following reasons :-

- i) CMSPs in pre NTP'99 era before migration did not pay any license fee (revenue share).
- ii) 1st and 2nd CMSPs got the advantage of early entry to the market in a duopoly regime.

Some of the operators have said that they are incurring losses. In this business losses are incurred initially, e.g., Orange, one of the largest mobile operators in U.K., took almost seven years to break even. Even in India some of the Service providers have started making profits. A number of studies have shown that even at present tariff levels the addition of new subscribers is profitable.

7.18 The 3rd alternative is that the existing entry fee of the fourth Cellular Operator would be the entry fee in the new Unified Access Licensing Regime. BSOs would pay the difference of the fourth CMSP's existing entry fee and the entry fee paid by them. It may be recalled that, even in the past, entry to cellular and basic services has been on fixed fee basis, e.g., for metros in the case of cellular and for the second BSO.

- 7.19 It is recommended that the 3rd alternative as mentioned in para-7.18 above may be accepted for fixing the entry fee for migration to Unified Access Licensing regime for Basic and Cellular services at the circle level.
- 7.20 In service areas where there is no fourth operator - viz., Bihar, Orissa, W.B. & A.N and Assam, etc. - no extra entry fee would be charged from the existing operators migrating to the Unified Access Licensing Regime, since in these areas operators did not see a potential mobile market at the time of repeated bidding for the 4th cellular operator.
- 7.21 M/s Reliance Infocomm, one of the country wide basic service operators, has been advertising its services as if the service is a full Cellular Mobile Service without any restriction of mobility. It has been doing it by obtaining a license as a BSO almost throughout the country and using multiple registration/call forwarding facility. This implies that right from the effective date of the license agreement, M/s. Reliance has competed as a cellular mobile service provider with just one exception - that the service drops at the time of moving from one SDCA to another. TRAI vide its letter dated 14.08.2003 had already written to DoT to clarify/amend the license conditions so that the condition of limited mobility within SDCA is implemented in letter and spirit. However, for unified licensing, TRAI considers that since M/s Reliance Infocomm by virtue of offering mobility even beyond SDCAs, has acted like a cellular operator right from the day of signing the license agreement, M/s Reliance infocomm is liable to pay the penal interest w.e.f the date of signing its license agreement till the date of migrating to the Unified Access License Regime in addition to the entry fee paid by 4th cellular operators in respective circles. Clause 21.5 of CMSP License agreement dealing with delay in payment of any dues is reproduced below :

“21.5 - Any delay in payment of Licence Fee, or any other dues payable under the LICENCE beyond the stipulated period will attract interest at a rate which will be 5% above the Prime Lending Rate (PLR) of state Bank of India prevalent on the day of payment became due. The interest shall be compounded monthly and a part of the month shall be reckoned as a full month for the purpose of calculation of interest.”

The State Bank of India, Local Head Office, Sansad Marg, New Delhi vide its letter dated Oct. 23, 2003 has indicated the (PLR) rate of interest for the year 2001-2002 @ 11.5%, 2002-2003 @ 11% w.e.f. 1.4.2002 and 10.75% w.e.f. 1.11.2002. The prevailing PLR is 10.5% w.e.f. 5.5.2003. Based on the provision of Clause 21.5 of CMSP License Agreement as mentioned above, penal interest has been calculated. Based on this the entry fee to be paid by M/s. Reliance for Migration to Unified Access Licensing regime has been calculated. In other words, M/s Reliance Infocomm would be treated at par with fourth cellular operator right from the date of signing their existing BSO license agreement.

- 7.22 Since the other Basic Service Operators have not breached the condition either, in letter or spirit, and have confined mobility within SDCA, they will pay only the difference between the entry fee paid by the fourth cellular operator and the entry fee already paid by them.
- 7.23 Based on the above principles, the indicative value of migration fee to be paid by different Basic Service providers is given in Annexure –III. The exact calculations should be carried out by the licensor at the time of offering migration based on above principles.
- 7.24 Since the service area for unified licensee will be as per existing CMSPs, it means existing BSOs in Maharashtra, Tamil Nadu and West Bengal will get two unified licenses (one for Metro city Mumbai and the other for the rest of Maharashtra and so on). The difference of entry fee

to be paid by them will be divided between Metro city license and the rest of the circle on pro rata basis of entry fee of the 4th cellular operators. In case the existing BSO wants to migrate to a Unified Access License only either in Metro or in rest of the circle, the difference will be again calculated by dividing the entry fee paid by existing BSO in the ratio of entry fee paid by the fourth Cellular operator for Metro and the rest of the circle. For Delhi, the service area of Unified Access License will include Gurgaon, Faridabad, Ghaziabad and NOIDA as for existing CMSPs. In West Bengal, there is no fourth cellular operator, so while migrating to Unified Access Licensing Regime, the BSO in West Bengal will not pay any extra entry fee. The same BSO in Kolkata, if it so desires, will have a separate Unified Access Licensing Regime by paying the difference in the entry fee paid by him for West Bengal and the entry fee of the fourth Cellular operator.

7.25 Since every service provider under Unified Access Regime will be authorised to offer cellular mobile services, the Rollout obligations and Performance Bank Guarantee in the Unified Access Regime would also be those of the fourth CMSP. The network growth in rural areas would be met through the USO Regime and funding from Access Deficit Charge (ADC) regime wherever applicable.

7.26 Migration would be on a voluntary basis and those WLL(M) players who do not wish to migrate to the full mobility regime, would only be required to pay the fee for WLL(M), with mobility strictly within SDCA, being recommended in line with TDSAT's direction.

License Fee

7.27 The existing license fee of the Cellular Operator/ Basic Service operators would be the license fee in the new circle-wise unified licensing regime, i.e., 12%, 10%, 8% of the Adjusted Gross Revenue (AGR) for category 'A', 'B' and 'C' Circles respectively.

Demand for compensation by CMSPs :

7.28 CMSP's argument that they should be compensated for allowing BSOs to offer limited mobility or full mobility as envisaged in Unified Access Licensing Regime is not tenable due to following reasons :-

- ii) CMSPs were given a relief of Rs.4565 crores in terms of NPV as calculated in the table below for migrating from fixed entry fee to revenue sharing regime in August, 1999.

| Present Value of benefit of migrating from fixed license fee to revenue-share license fee regime | | | | | |
|---|------------------------------|------------------------------|-----------------------------------|---|-----------------------------|
| <i>(Considering License Fee as 15%)</i> | | | | | |
| ALL CIRCLE AND METRO LICENSES | | | PRESENT VALUE IN TERMS OF 2003-04 | | |
| Year | License Fee under old regime | License Fee under new regime | Difference | Present Value of difference (in terms of 2003-04) | Discounting Factor (13.86%) |
| Aug 99 - Mar 00 | 1603 | 275 | 1328 | 2232 | 1.681 |
| Apr 00 - Mar 01 | 2270 | 619 | 1651 | 2438 | 1.476 |
| Apr 01 - Mar 02 | 2734 | 793 | 1942 | 2517 | 1.296 |
| Apr 02 - Mar 03 | 2455 | 872 | 1584 | 1803 | 1.139 |
| Apr 03 - Mar 04 | 2470 | 1727 | 743 | 743 | 1.000 |
| Apr 04 - Mar 05 | 2511 | 2698 | -186 | -164 | 0.878 |
| Apr 05 - Mar 06 | 2591 | 4586 | -1995 | -1539 | 0.771 |
| Apr 06 - Mar 07 | 2680 | 7796 | -5116 | -3466 | 0.677 |
| | 19315 | 19365 | -50 | 4565 | |

1. License Fee quoted by Koshika Telecom has not been taken into account.
2. Discount rate = 13.86%
3. License fee for Metro Circle has been projected based on subscriber growth in 1997-1999 and fixed license fee of Rs. 6023
4. Till 2002-03, subscriber base under new regime is actual subscriber. After that, based on the growth as per the other Table for longer time period.
5. For license Fee under new regime, upto 2002-03 actual fee adjusted for 15% revenue share. After that, based on ARPU of Rs.550/- per month per subscriber for the year 2003-04 Rs.500/- per month per subscriber, thereafter.

- iii) In Jan, 2001 while permitting limited mobility the license fee of CMSPs was reduced from 15% to 12%, 10% and 8% of Category 'A', 'B' and 'C' circles respectively. This resulted in a relief of Rs.15,000

crores based on NPV during the validity period of the license. The relevant NPV calculations are given below :

| ESTIMATED SAVINGS IN LICENSE FEES TO CELLULAR INDUSTRY from 1.4.2003 onwards till end of Licence Period | | | | | | | | | | | | | | | |
|---|------------------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Circle Category | Subscriber base in lakhs 31.3.2003 | Projected subscriber base over the licence period (in lakhs) | | | | | | | | | | | | | |
| | | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 |
| Metro | 44.40 | 77.69 | 132.08 | 224.53 | 287.51 | 350.5 | 413.5 | 476.5 | 539.4 | 602.4 | 665.4 | 728.4 | 791.4 | 854.4 | 917.3 |
| Circle 'A' | 43.65 | 76.39 | 129.86 | 220.76 | 282.68 | 344.6 | 406.5 | 468.5 | 530.4 | 592.3 | 654.2 | 716.2 | 778.1 | 840.0 | 901.9 |
| Circle 'B' | 33.75 | 59.05 | 100.39 | 170.67 | 218.54 | 266.4 | 314.3 | 362.2 | 410.0 | 457.9 | 505.8 | 553.7 | 601.5 | 649.4 | 697.3 |
| Circle 'C' | 5.09 | 8.90 | 15.13 | 25.72 | 32.94 | 40.2 | 47.4 | 54.6 | 61.8 | 69.0 | 76.2 | 83.5 | 90.7 | 97.9 | 105.1 |
| | 127 | 222 | 377 | 642 | 822 | 1002 | 1182 | 1362 | 1542 | 1722 | 1902 | 2082 | 2262 | 2442 | 2622 |
| Projected Annual Growth Rate | | 75 | 70 | 70 | 28.1 | 21.9 | 18.0 | 15.2 | 13.2 | 11.7 | 10.5 | 9.5 | 8.6 | 8.0 | 7.4 |

| Circle Category | LF Saving per subs | Savings in license fee during the year (in Rs. Crores) | | | | | | | | | | | | | | Total Saving in Rs. Crores |
|-----------------|--------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------------------------|
| | | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | |
| Metro | 180 | 109.9 | 188.8 | 320.9 | 460.8 | 574.2 | 687.6 | 800.9 | 914.3 | 1027.7 | 1141.1 | 1254.4 | 1367.8 | 1481.2 | 1594.5 | |
| Circle 'A' | 180 | 108.0 | 185.6 | 315.6 | 453.1 | 564.6 | 676.0 | 787.5 | 899.0 | 1010.4 | 1121.9 | 1233.4 | 1344.8 | 1456.3 | 1567.8 | |
| Circle 'B' | 300 | 139.2 | 239.2 | 406.6 | 583.8 | 727.4 | 871.1 | 1014.7 | 1158.3 | 1301.9 | 1445.6 | 1589.2 | 1732.8 | 1876.4 | 2020.1 | |
| Circle 'C' | 420 | 29.4 | 50.5 | 85.8 | 123.2 | 153.5 | 183.8 | 214.1 | 244.4 | 274.7 | 305.0 | 335.3 | 365.7 | 396.0 | 426.3 | |
| | | 386 | 664 | 1129 | 1621 | 2020 | 2418 | 2817 | 3216 | 3615 | 4014 | 4412 | 4811 | 5210 | 5609 | 41942 |
| Years | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | PVAC of saving in Rs. Crores |
| PVAC | | 386 | 583 | 871 | 1098 | 1202 | 1264 | 1293 | 1296 | 1280 | 1248 | 1205 | 1154 | 1097 | 1038 | 15015 |
| Cost of Capital | 13.86 | | | | | | | | | | | | | | | |

- iii) Further, CMSPs were permitted to retain 5% of pass through revenue paid to Basic service operators.
- iv) CMSPs were allowed to offer fixed services using their GSM infrastructure.
- v) CMSPs were allowed to offer mobile PCO services.

Considering the concessions given to CMSPs from time to time and the fact that CMSPs had agreed to unlimited competition as brought out in Para 5.4, the Authority does not recommend any further concessions to be given to existing CMSPs. Moverover, Hon'ble Supreme Court in its judgement dated 17th December, 2002 has talked about level playing field and this aspect has been taken care in these recommendations.

Spectrum related issues

- 7.29 Existing three GSM Cellular Operators have been allocated Spectrum in 890-915 MHz paired with 935-960 MHz Band. The 4th Cellular Operator has been allotted spectrum in 1710-1785 MHz, paired with 1805-1880 MHz Bands. The allotted spectrum varies from 4.4+4.4 MHz to 10+10 MHz depending upon the number of subscribers in each service area. Existing BSOs shall be allocated 5+5 MHz in 824-844 MHz paired with 869-889 MHz bands on a first come first served basis. The same principle shall be followed for allocation of frequency in the 1880-1900 MHz. band.
- 7.30 Efficient utilization of spectrum by all service providers is of utmost concern to TRAI especially in a country like India where wireless subscribers are growing at a very fast rate. However, based upon the international statistics (number of cellular subscribers and allotted spectrum, please see annexure -IV), TRAI is of the opinion that existing operators need improvement in efficiency of utilisation of the spectrum TRAI shall provide its recommendations on efficient utilisation of spectrum, spectrum pricing, availability and spectrum allocation procedure shortly. DoT may like to issue spectrum related guidelines based on the recommendations submitted by TRAI. .
- 7.31 Service Providers migrating to the Unified Access Licensing Regime will continue to provide wireless services in the already allocated/contracted spectrum and no additional spectrum would be allotted only because of migration. There shall be no change in the spectrum allocation procedure as part of migration process.

Merger & Acquisition:

- 7.32 TRAI is of the opinion that a sustainable market structure should be allowed to consolidate so as to achieve higher growth through efficient utilization of resources. Hence intra-circle Merger and Acquisition should be permitted subject to guidelines on Merger & Acquisitions. Other aspects of dominance will also be tested at the time of merger.

Guidelines for Merger and Acquisitions shall be recommended to the Government separately.

7.33 Under intra-circle M&A case, the allocated spectrum to merging operators would also get merged subject to specified principles to be evolved. Beyond the present spectrum allocation or contract under the existing license agreements, there should be a different spectrum-pricing regime to improve the efficiency of Spectrum utilisation. The Authority would soon send its recommendations on the subject. The Authority is not in favour of high spectrum pricing, since such a regime will make the services more expensive and the desired growth will not take place in telecommunications.

7.34 Since in the service area of existing BSOs for Delhi Metro satellite towns like Gurgaon, Faridabad, Ghaziabad and NOIDA are not included, and the same will be included in the service area of ULO. The ULO will have to be authorized by WPC to use existing/additional frequencies.

Technology

7.35 The technology neutral stance of the present licencing policy shall continue. Service Providers shall also be free to use any media (e.g. telephone wire, telegraph wire, TV cable, electricity wire, wireless) to provide telecom services.

FDI Limit & Revenue sharing

7.36 Since ultimately only the Authorisation Process is to be implemented in a time bound manner and each service can overlap with areas henceforth reserved for other service providers, it is necessary that revenue sharing and FDI limits for all telecom services shall be the same and the existing different limits for different services will have to be altered. This has already been done for fixed/cellular but will have to be extended.

Competition

7.37 On the issue of introducing more competition, the TRAI has always been in favour of open and healthy competition. In its recommendations on the introduction of the 5th and 6th Cellular Mobile license, the TRAI opined that

“Induction of additional mobile service providers in various service areas can be considered if there is adequate availability of spectrum for the existing service providers as well as for the new players, if permitted.”

Taking cognisance of spectrum availability, the TRAI is in favour of introducing more competition. However, we feel that in lieu of more cellular operators, it would be more appropriate to have competition in a Unified Licensing framework which will be initiated after six months.

Time and need of introduction of more service providers

7.38 As already mentioned earlier, with the continuing growth trend, the expected wireless subscriber base by December, 2005 will be 100 million. To achieve 100 million wireless subscribers (cellular & WLL both) the required investment is of the order of Rs.50,000 crores. As brought out in para 6.5 this highlights a need at present itself for greater efforts by existing and new service providers to expand the investment and to meet the market demand for telecom services and help achieve the objectives of telecom growth and development in the country.

7.39 As brought out in Para-7.37 above, the induction of additional mobile service providers in various service areas can be considered if there is adequate availability of spectrum. As the existing players have to improve the efficiency of utilisation of spectrum and if Government ensures availability of additional spectrum then in the existing Licensing Regime, they may introduce additional players through a multi-stage bidding process as was followed for 4th cellular operator.

7.40 Considering the above, the role of existing and new players in wireless services at the present juncture is well established.

Summary of Recommendations

In the interest of consumers of the telecom sector and to promote and ensure orderly growth of the telecom sector, the Authority recommends that the country should migrate to “Unified Licensing” Regime for all telecom services. As a preparatory step, Unified Access License will be implemented for access services in each circle. Finally, within six months Unified Access Licensing through an Authorisation process for all services and all geographical areas should be initiated. Service providers will be free to offer all services in all geographical areas through automatic licensing/authorisation subject to notifying the Regulatory Authority and compliance with published guidelines. The guidelines will be published by the Government/Regulator to include various terms & conditions of authorisation, e.g., nominal entry fee, Universal Service Obligation (USO), security conditions, etc. Service providers who need spectrum for their services will approach Government of India separately. The guidelines for spectrum allocation which would cover the methodology for spectrum pricing, will also be notified by the Government. Service providers would be given choice to migrate to the new regime or maintain the present position

The present licensing regime may not be flexible enough to accommodate changes. To achieve very high growth in the Telecom Sector in a competitive and fast technological development era, the new unified regime will create a litigation free environment because all service providers will be in a position to offer all types of services in all service areas depending upon service provider’s choice. As a preparatory step, Unified Access License will be implemented for access services in each circle. Finally, within six months Unified Access Licensing through an Authorisation process for all services and all geographical areas should be initiated.

4. International Practices

A number of countries are migrating towards the concept of authorisation or converged licensing for wireline and wireless services. This has been encouraged due to technological developments, consumer demand, long term sustainability of telecom service providers, and optimum utilisation of resources. The scenario of converged licenses in some countries from Asia-Pacific and Europe is discussed below. Many of these markets have high mobile and wireline penetration rates, and converged services are being driven by a very competitive marketplace.

4.1 Australia

The Telecommunications Act 1997 opened the Australian market to further competition, placing no limits on the number of general carrier licences. In Australia, there is an open licensing regime for telecommunications with no distinction being drawn on the basis of the technology used. The Regulatory framework encourages Fixed-mobile convergence. Licenses are general telecoms licenses. The Australian Communications Authority (ACA) administers the regime that licenses telecommunications carriers. A carrier license allows the owner(s) of a network to supply carriage services to the public subject to obligations set out in its license, the Telecommunications Act 1997, and any additional conditions imposed by the Minister. Carriers are individually licensed and pay application and ongoing licence fees that recover the costs of regulating the industry. There is an application charge of a nominal amount of \$ 10,000 which is payable before the application can be processed. Carriers are required to pay an annual license charge. This comprises a \$ 10,000 fixed component and a variable component based on carrier's eligible revenue. Service providers are not subjected to any licensing requirements but are required to comply with a range of obligations including the standard service provider rules set out in Schedule 2 of the Telecommunications Act. One.Tel was the first Australian telephone company to offer users the opportunity to merge mobile, long-distance, fax and Internet services on one bill. Instead of having to make multiple payments every month or quarter, only one payment

per month is required. Most new entrants into the telecommunications market can now offer a full range of fixed and mobile services. Some of these companies act as resellers of mobile network capacity for one of the three mobile operators. Generally all mobile operators offer mobile VPN services.

4.2 Denmark

In Denmark, Executive Order No. 786 of 19th September 2002 does not require a service provider to obtain a licence. He need not take any action or await a decision from the National IT- and Telecom Agency before launching the service, and no specific payment on the part of the service provider is required. Interconnection to other networks is subject to the telecommunications regulation on competition and interconnection. A separate authorisation for frequencies is, however, required.

4.3 European Union

Single Regulatory framework as a result of EU Directive

The European Parliament and the Council gave a set of five directives to its Member States so as to provide for a single Regulatory framework for all transmission network and services. These directives are

- a) Directive 2002 / 21 / EC which provides a common regulatory framework for electronic communications network and services;
- b) Directive 2002/20/EC on the authorization of electronic communications network and services
- c) Directive 2002/19/EC on access to, and interconnection of, electronic communications network and associated facilities;
- d) Directive 2002/22/EC on universal service and user's rights relating to electronic communications network and services
- e) Directive 97/66/EC on the processing of personal data and the protection of privacy in the telecommunications sector

4.3.1 The directive dated March 7, 2002 on the Authorisation of electronic communications networks and services recognizes that

“ 2. Convergence between different electronic communications networks and services and their technologies requires the establishment of an authorization system covering all comparable services in a similar way regardless of the technologies used.”

Article 3 (General authorisation of electronic communications networks and services) of the Directive requires

“2. The provision of electronic communications networks or the provision of electronic communications services may, without prejudice to the specific obligations referred to in Article 6(2) or rights of use referred to in Article 5, only be subject to a general authorization. The undertaking concerned may be required to submit a notification but may not be required to obtain an explicit decision or any other administrative act by the national regulatory authority before exercising the rights stemming from the authorization. Upon notification, when required, an undertaking may begin activity, where necessary subject to the provisions on rights of use in Articles 5,6 and 7.”

4.3.2 The Service specific licenses will be replaced by authorizations in the EU Countries. The Member States are however, permitted to impose a set of conditions to the general authorizations, for example financial contributions to funding Universal Service, Administrative charges to cover costs which will be incurred in the management, control and enforcement of the general authorisation scheme and of rights of use and of specific obligations as referred to in Article 6(2), (which may include costs for international cooperation, harmonisation and standardisation, market analysis, monitoring compliance and other market control, as well as regulatory work involving preparation and enforcement, of secondary legislation and administrative decisions, such as decisions on access and interconnection) accessibility of numbers, interoperability of services etc.

4.3.3 For the use of Radio Spectrum, grant of numbers and rights to install facilities the relevant authorities may impose separate fees. Specifically, in case of spectrum Member States can grant such rights on the basis of selection criteria, which must be objective, transparent, non – discriminatory and proportionate.

4.4 Finland

4.4.1 There are more than 90 telecommunications service providers in Finland including local, long distance, international and mobile operators. The annual telecommunications turnover is about FIM 16,000 million (about USD 2,800 million). As a result of continuous telecommunication liberalization new licensing procedure was adopted as of June 1 1997. A license is now mandatory only if an operator provides mobile telecommunications service, which requires frequencies, i.e. effectively a unified license is available if frequency spectrum is obtained.

4.4.2 Before 1994, local and long distance services in Finland were provided by different companies. Forty-five locally based operators (later known as Finnet Group) provided local services. Telecom Finland (now called Sonera) was the traditional monopoly long-distance and international operator. It also provided local services in remote areas of the country. The Finnish market was fully liberalised at the end of 1994, enabling the Finnet Group and Sonera to compete in each other's markets. In the mobile market Sonera, Radiolinja, Finnet group and Telia Finland were the key players. Sonera and Radiolinja have GSM and DCS1800 licenses. Telia Finland and Finnet group have DCS1800 licenses. Sonera used its DCS capacity to enhance the GSM market and to offer homezone service. Telia also offered a homezone tariff on its GSM 1800 network at a level that put it into competition with fixed line services. In terms of convergent services, no other market in the world is as advanced. Finland was one of the first countries where convergent services became available. The first DECT-based public access service and the first mobile centrex solutions were introduced in Finland, and a mobile VPN service was launched in 1991. In the beginning of 1999, almost 60% of the population had a mobile phone. This rate was higher than the wireline penetration rate in Finland.

4.4.3 Helsinki Telephone Company, the largest local telephone company within Finnet group, had launched a unique flat-rate low mobility DCS1800 service, called Cityphone. This was integrated within the PSTN numbering plan

and offers single billing and a single voicemail box. Calls to fixed line number are automatically diverted when the fixed phone is not answered. Calls between the fixed number and related mobile numbers are also cheaper than standard PSTN rates.

4.5 Germany

Germany has been slow to liberalise its telecoms markets. Mobile competition was first introduced in 1992 and fixed markets were fully deregulated in 1998. The Regulatory Authority for Telecommunications and Posts (RegTP), was established in January 1998. It has been a strong and effective body in maintaining fair competition. RegTP encourages convergent services, and most of the German mobile operators have fixed licensee as a shareholder and they can provide integrated fixed and mobile services. Unified licensing has been actively promoted in Germany by the service providers. Viag Interkom, one of the key players in Germany, is using an integrated network to offer fixed and mobile services. Most converged services in Germany are based on mobile VPN services and on personal numbering. Mobile tariffs have tended to be high in Germany, but competition has led to tariff reductions and several initiatives in new pricing structures, including homezone tariffing. German operators are already on course to offer a wide range of fixed and mobile convergent services viz. personal numbering and homezone services.

4.6 Malaysia

In Malaysia, the licensing framework is formulated to be both technology and service neutral. The framework permits that communications infrastructure can be used to provide any type of communications service that it is technically capable of providing. Recognizing the fact that the legislation governing the communications industry was outdated and no longer representative of the merging market realities, the Government of Malaysia enacted a new convergence legislation, which comprises the Communications and Multimedia Act, 1998 (**CMA**) and the Malaysian Communications and Multimedia Commission Act 1998 (**MCMCA**). The introduction of CMA and MCMCA goes

beyond the issue of unified licensing but in this paper this issue has been considered only to the extent of addressing unified licensing of fixed and mobile services. So far as unified licensing for wireline and wireless services in Malaysia is concerned, there are four categories of licenses viz. Network Facilities Providers, Network Service Providers, Application Service Providers and Content Application Service Providers.

The applicable license fees for each type of licence are as follows:

- a) Application Fee - RM10,000.00 (non refundable)
- b) Approval Fee - RM50,000.00
- c) Annual Fee - 0.5% of Gross Annual Turnover or RM50,000 - whichever is higher

There are rebate clauses in License Fee for R&D and other activities.

4.7 Singapore

In Singapore, a Unified-licensing framework has already been implemented. The basic intention of the framework is to have a single license for all networks / services the operator intends to operate / offer. The licensees have been categorised into Facilities based Operators (FBOs) and Service Based Operators (SBOs).

The Facility based operators (FBOs) can build telecommunications network for the carriage of telecommunications and broadcast traffic. The guidelines¹ state

“The range of telecommunication services to be provided over the licensees’ facilities can include backbone/wholesale bandwidth capacity and interconnection/access services to other licensed telecommunication operators, or other domestic and international services such as the following:

- *Public Switched Telephone Services*
- *Public Switched Message Services*
- *Public Switched Integrated Services Digital Network (ISDN) Services*
- *Leased Circuit Services*
- *Public Switched Data Services*

¹ Available at <http://www.ida.gov.sg>

- *Public Radio-communication Services*
- *Public Cellular Mobile Telephone Service (PCMTS)*
- *Public Radio Paging Services (PRPS)*
- *Public Trunked Radio Services (PTRS)*
- *Public Mobile Data Services (PMDS)*
- *Public Mobile Broadband Multimedia Services*
- *Public Fixed-Wireless Broadband Multimedia Services*
- *Terrestrial Telecommunication Network for Broadcasting Purposes*
- *Satellite Uplink/Downlink for Broadcasting Purposes”*

The entry fees and the license fees depend upon the service to be provided and is generally expressed as a percentage of Annual Gross Turnover (AGTO) subject to a minimum in some cases. Table below provides the details of entry fees, license fees and duration of license for each service.

Table : Entry fees, Annual fees and license duration in Singapore

| Licence | Licence Fee |
|---|--|
| <ul style="list-style-type: none"> • FBO designated as PTL | Initial Fee: None Annual Fee: 1% AGTO, subject to a minimum of S\$250,000 per year Licence Duration: 20 years, renewable for a further period as IDA thinks fit |
| <ul style="list-style-type: none"> • Terrestrial telecommunication networks for telecommunication purposes | Initial Fee: None Annual Fee: 1% AGTO, subject to minimum of S\$100,000 per year Licence Duration: 15 years, renewable for a further period as IDA thinks fit |
| <ul style="list-style-type: none"> • Public cellular mobile telephone services • Public mobile broadband multimedia services • Public fixed-wireless broadband multimedia services | Due to limited frequency spectrum, the licence fees and licence duration will be specified together with the approach to award the respective spectrum rights and licences, via a comparative selection exercise and/or an auction exercise. |
| <ul style="list-style-type: none"> • Public radio paging services • Public mobile data services • Public trunked radio services | Initial Fee: None Annual Fee: 1% AGTO, subject to minimum of S\$1,200 per year Licence Duration: 10 years, renewable for a further period as IDA thinks fit |
| <ul style="list-style-type: none"> • Terrestrial telecommunication network for broadcasting purposes only • Satellite Uplink/Downlink for broadcasting purposes | Initial Fee: None Annual Fee: S\$5,000 Licence Duration: 10 years, renewable on a 5-yearly basis |

Source: <http://www.ida.gov.sg>, FBO guidelines

However, in addition to these there are other charges such as spectrum, Number Allocation Charges, etc.

4.8 U.K.

In U.K, OFCOM the new telecom and broadcasting regulator has been set up and a new Communication Act is in place. The new regime abolishes the requirement for licensing. It is consistent with the EU directive concept, which states that persons wishing to provide electronic networks and services should be free to do so without having to obtain prior permission, subject only to giving notification to the regulatory Authority and subject to compliance with applicable obligations.

| Entry fees for Cellular Mobile Service Providers and Basic Service Operators | | | | | | | | | |
|--|-------------|--------------------|--|------------------|--|--------------------------|--|-------------------------------|---|
| Cellular | | | | | | BSOs | | | |
| S. No. | Circle (A) | Licensee (Old) (B) | From Licensees of Pre-Migration (Amt. in Crores) (C) | New Licensee (D) | From 4th Cellular Operators (Amt. in Crores) (E) | Name of the operator (F) | Entry fee from Licensees migrated (Amt. in Crores) (G) | Name of new operator (H) | Entry fee from new operators (Amt. in Crores) (I) |
| 1 | Rajasthan | ADIL | 108.99 | Escorts | 32.25 | Shyam Telelink | 29.29 | | |
| | Rajasthan | Hexacom | 108.34 | | | | | | |
| | Rajasthan | | | | | | | Reliance Telecom | 20 |
| 2 | UP(East) | ADIL | 138.25 | Escorts | 45.25 | | | Reliance Telecom | 15 |
| 3 | Gujarat | Birla AT & T | 511.95 | Bharti | 109.01 | Reliance Telecom | 179.09 | TTSL | 40 |
| | | Fascel | 508.78 | | | | | | |
| 4 | Maharashtra | Birla AT & T | 473.03 | Bharti | 189 | Hughes | 532.55 | Reliance Telecom(Inc. Mumbai) | 115 |
| | | BPL | 470.1 | | | | | | |
| 5 | North East | Reliance | 1.21 | | | | | | |
| | | Hexacom | 1.21 | | | | | | |
| 6 | Karnataka | Spice | 395.04 | Barakamba | 206.83 | | | TTSL | 35 |
| | | Bharti Mobile | 375.7 | | | | | Reliance Telecom | 35 |
| | | | | | | | | Bharti Telenet | 35 |
| 7 | Punjab | Spice | 359.02 | Escorts | 151.75 | HFCL | 177.59 | Reliance Telecom | 20 |
| | | Bharati Mobile | 488.49 | | | | | | |
| 8 | AP | Bharti Mobile | 285.64 | Barakamba | 103.01 | TTSL | 161.47 | Reliance Telecom | 35 |
| | | Tata | 283.87 | | | | | | |
| 9 | Haryana | ADIL | 68.49 | Bharti | 21.46 | | | Reliance Telecom | 10 |
| | | Escotel | 68.49 | | | | | Bharti Telenet | 10 |
| 10 | Kerala | Escotel | 147.53 | Bharti | 40.54 | | | Reliance Telecom | 20 |
| | | BPL | 147.53 | | | | | | |

| Entry fees for Cellular Mobile Service Providers and Basic Service Operators | | | | | | | | | |
|--|--------------|--------------------|--|------------------|--|--------------------------|--|--------------------------------|---|
| Cellular | | | | | | BSOs | | | |
| S.No. | Circle (A) | Licensee (Old) (B) | From Licensees of Pre-Migration (Amt. in Crores) (C) | New Licensee (D) | From 4th Cellular Operators (Amt. in Crores) (E) | Name of the operator (F) | Entry fee from Licensees migrated (Amt. in Crores) (G) | Name of new operator (H) | Entry fee from new operators (Amt. in Crores) (I) |
| 11 | UP(West) | Escotel | 115.92 | Bharti | 30.55 | | | Reliance Telecom | 15 |
| 12 | West Bengal | Reliance | 12.24 | | | | | Reliance Telecom(Inc. Kolkata) | 25 |
| 13 | MP | Reliance | 14.56 | Bharti | 17.45 | Bharti Telenet | 35.33 | Reliance Telecom | 20 |
| | | RPG | 14.56 | | | | | | |
| 14 | Assam | Reliance | 0.38 | | | | | | |
| 15 | Bihar | Reliance | 89.5 | | | | | Reliance Telecom | 10 |
| 16 | Himachal | Reliance | 4.27 | Escorts | 1.1 | | | Reliance Telecom | 2 |
| | | Bharti Telenet | 4.27 | | | | | | |
| 17 | Orissa | Reliance | 58.49 | | | | | Reliance Telecom | 5 |
| 18 | Tamil Nadu | BPL | 238.56 | Bharti | 79 | | | TTSL(Inc. Chennai) | 50 |
| | | Srinivas | 44.35 | | | | | Reliance Telecom(Inc. Chennai) | 50 |
| | | | | | | | | Bharti Telenet(Inc. Chennai) | 50 |
| 19 | Delhi | Bharti | 98.15 | Birla At & T | 170.7 | | | TTSL | 50 |
| | | Sterling | 70.94 | | | | | Reliance Telecom | 50 |
| | | | | | | | | Bharti Telenet | 50 |
| 20 | Mumbai | BPL | 88.86 | Bharti | 203.66 | | | | |
| | | Hutchison Max | 83.33 | | | | | | |
| 21 | Chennai | RPG | 21.59 | Barakamba | 154 | | | | |
| | | Skycell | 20.95 | | | | | | |
| 22 | Kolkata | Modi Tels | 31.5 | Reliance | 78.01 | | | | |
| | | Usha | 25.8 | | | | | | |
| 23 | A&N | | | | | | | Reliance Telecom | 1 |
| | Total | | 5979.88 | | 1633.57 | | 1115.32 | | 768 |

Annex-III

| BSOs migration to Unified Licensing | | | | | | | | | |
|-------------------------------------|------------------|-------------|---------------------------------------|-----------------------|---|---|--|-----------------------------|--------|
| S.No. | Name of Operator | Circle | Date of signing of license agreements | Entry Fee Paid by BSO | Entry Fee paid by 4th Cellular Operator | Difference between entry fees of BSOs & CMSOs | Interest on delayed entry fees payment | Total entry fees to be paid | |
| | | | | in Rs Crores | in Rs Crores | in Rs Crores | in Rs Crores | in Rs. Crores | |
| 1 | Reliance | Rajasthan | 20.7.2001 | 20 | 32.25 | 12.25 | 485 | 1581 | |
| | | UP(East) | 20.7.2001 | 15 | 45.25 | 30.25 | | | |
| | | Gujarat | 18.3.1997 | 179.09(old) | 109.01 | 0 | | | |
| | | Maharashtra | | | 189+203.66* | | | | |
| | | | | | 115 | 392.66 | | | 277.66 |
| | | Karnataka | 20.7.2001 | 35 | 206.83 | 171.83 | | | |
| | | Punjab | 20.7.2001 | 20 | 151.75 | 131.75 | | | |
| | | AP | 20.7.2001 | 35 | 103.01 | 68.01 | | | |
| | | Haryana | 20.7.2001 | 10 | 21.46 | 11.46 | | | |
| | | Kerala | 20.7.2001 | 20 | 40.54 | 20.54 | | | |
| | | UP(West) | 20.7.2001 | 15 | 30.55 | 15.55 | | | |
| | | West Bengal | 20.7.2001 | | 0+78.01* | | | | |
| | | | | | 25 | 78.01 | | | 53.01 |
| | | MP | 20.7.2001 | 20 | 17.45 | 0 | | | |
| | | Bihar | 20.7.2001 | 10 | | | | | |
| | | Himachal | 20.7.2001 | 2 | 1.1 | 0 | | | |
| | | Orissa | 20.7.2001 | 5 | | | | | |
| | | Tamil Nadu | 26.9.2001 | | | 79+154* | | | - |
| | | | | | 50 | 233 | | | 183 |
| | | | | | | | | | |
| | | Delhi | 20.7.2001 | 50 | 170.7 | 120.7 | | | |
| | | A&N | 20.7.2001 | 1 | | | | | |
| | Total | | | 410 | 1506 | 1096 | | | |
| 2 | Tata | Gujarat | 31.8.2001 | 40 | 109.01 | 69.01 | 0 | 545 | |
| | | Maharashtra | 31.8.2001 | | 189+203.66* | - | | | |
| | | | | | 532.55(old) | 392.66 | | | 0 |
| | | Karnataka | 31.8.2001 | 35 | 206.83 | 171.83 | | | |
| | | AP | 4.11.1997 | 161.47(old) | 103.01 | 0 | | | |
| | | Tamil Nadu | 31.8.2001 | | | 79+154* | | | - |
| | | | | | 50 | 233 | | | 183 |
| | | Delhi | 31.8.2001 | 50 | 170.7 | 120.7 | | | |
| | Total | | | 175 | 720 | 545 | | | |
| 3 | Bharti | Karnataka | 29.10.2001 | 35 | 206.83 | 171.83 | 0 | 487.0 | |
| | | Haryana | 8.10.2001 | 10 | 21.46 | 11.46 | | | |
| | | MP | 28.2.1997 | 35.33(old) | 17.45 | 0 | | | |
| | | Tamil Nadu | 29.10.2001 | 50 | 79+154* | | | | |
| | | Tamil Nadra | | | | 233 | | | 183 |
| | | Delhi | 29.10.2001 | 50 | 170.7 | 120.7 | | | |
| | Total | | | 145 | 649 | 487 | | | |
| 4 | Shyam | Rajasthan | 4.3.1998 | 29.29(old) | 32.25 | 2.96 | 0 | 3.0 | |
| | Total | | | | | 2.96 | 0 | 3.0 | |
| 5 | HFCL | Punjab | 7.11.1997 | 177.59(old) | 151.75 | 0 | 0 | 0.0 | |
| | Total | | | | | 0 | 0 | 0.0 | |

*For BSOs in MH, WB and TN the entry fee of fourth cellular MH+Mumbai, WB+Kolkata and TN+Chennai has been taken.

International Statistics for Spectrum utilisation

| Country | Largest operator | Spectrum allocated | Subscriber base * | Subscribers ('000s) per Mhz |
|-------------|--------------------|--------------------|-------------------|-----------------------------|
| | | in Mhz | in Million | |
| Austria | Mobilkom | 11.8 | 2.6 | 219 |
| Belgium | Proximus | 27.0 | 3.2 | 119 |
| Denmark | TDM | 35.0 | 1.7 | 48 |
| Finland | Sonera | 36.2 | 2.2 | 61 |
| France | France Telecom | 24.0 | 13.9 | 581 |
| Germany | Vodafone | 17.8 | 19.2 | 1081 |
| Italy | TIM | 20.8 | 17.0 | 817 |
| Netherlands | KPN Telecom | 30.0 | 4.8 | 160 |
| Norway | Telenor Mobil | 19.6 | 2.1 | 106 |
| Romania | Mobil Rom | 12.4 | 1.2 | 99 |
| Spain | Telefonica Moviles | 25.4 | 13.6 | 535 |
| Sweden | Telia Mobitel | 22.2 | 3.1 | 140 |
| Turkey | Turkcell | 10.0 | 9.2 | 920 |
| UK | Vodafone | 22.4 | 10.6 | 473 |

* Europe subscriber base has been taken from 2001 study of European Radiocommunications Office.

Indian Scenario

| Service Area | Largest operator | Spectrum allocated | Subscriber base (in Million)* | Subscribers ('000s) per Mhz |
|--------------|------------------|--------------------|-------------------------------|-----------------------------|
| Haryana | BSNL | 6.2 | 0.1 | 22 |
| Maharashtra | Idea Cellular | 8.0 | 0.7 | 88 |
| Gujarat | Fascel | 8.0 | 0.7 | 91 |
| Punjab | Bharti Mobile | 6.2 | 0.6 | 95 |

* As on September, 2003

If we compare the spectrum usage of our service areas with some of the European countries of comparable size, it can be inferred that much higher subscriber density is possible.

Annexure IV (contd)

Metros

The Authority also had a look at the subs ('000s) per Mhz in Metro cities and compared it with those of Beijing and Shanghai. The comparison is given below:

| Cities | Cellular Operators | Spectrum allocated | Subscriber base | Subscriber ('000s) per Mhz |
|------------|--------------------------------|--------------------|-----------------|----------------------------|
| | | in Mhz | in Million | |
| Delhi | Bharti China Mobile & China | 10 | 1.2 | 122 |
| Beijing* | Unicom | 60 | 10.1 | 169 |
| Shanghai** | China Mobile | 34 | 6.3 | 185 |

* source: <http://www.mc21st.com/en/marketing/2002/m0913-00.htm>

** source: Kotak institutional securities

It can be seen that larger number of subscribers are being served in these cities, when compared with those in India.