PREFACE

Radio Paging Service is an affordable means of transmitting information to persons even when they are mobile. Ever since its evolution in 1921, as a one-way information broadcasting solution, it has spread its reach far and wide. Realising the potential that it possesses, India opened up Radio Paging Service in 1992 and awarded licences for 27 cities and 19 Circles through an open tendering process. The Service was commercially launched in 1995. The growth in the initial years was encouraging but of late the industry has been facing a difficult situation, importantly due to fierce competition from other mobile telecommunication services.

The New Telecom Policy (NTP) 1999 has evolved a framework, which seeks to significantly redefine the competitive nature of the industry. The policy objectives envisaged for Radio Paging Service Providers (RPSP) include direct interconnectivity between licensed RPSPs, grant of separate license on a non-exclusive basis for each service area of operation for an initial period of twenty years extendible by additional periods of ten years thereafter, entry of more operators in a service area and a one-time entry fee and levy of license fee as a percentage of revenue. These Policy guidelines were offered in the form of a migration package to the existing service providers by the government. While most of the circle operators accepted the package, existing operators in cities have not done so. The government has, therefore, decided to implement the migration package in the Circles of Andhra Pradesh, Gujarat, Maharashtra, Karnataka, Kerala, Tamil Nadu, Himanchal Pradesh, Punjab and Haryana. Under the scheme the government may also issue additional licenses in these circles in the vacant slots and also new licenses.

Pursuant to the policy framework and developments thereafter, TRAI's recommendations have been sought by the government on the following

- Appropriate level of Entry Fee for new operators,
- Basis of selection of new operators,
- Percentage of revenue to be shared with the Licensor for different service areas of operation & Definition of revenue for the purpose,
- License fee arrangement (revenue share) for the existing Circle Radio Paging Service Licensees and the definition of revenue for the above purpose.

This Consultation Paper aims to provide a basis for public consultation on issues relevant to licensing of radio paging services. The Radio Paging industry is undergoing a difficult phase in our country today. Despite efforts of the Service providers to increase customer base, the numbers

have reached only about seven and a half lakhs by March 2000 while the number of licensees have actually declined. Since 1996 twenty-nine licenses (15 city & 14 Circle) have been cancelled and their services are, therefore, not operational today.

The major reasons construed for non-performance of the industry include stiff competition from other mobile services, existing custom duties on Pager instruments, prevailing tariff pattern and high capital cost per subscriber in circles as a result of large area coverage and low subscriber density. The industry association has sought relief through measures like zero license fee, reimbursements from USO funds & better interconnectivity terms. The paper seeks to discuss the problems of Radio paging operations, its financial viability and issues related to Licensing.

I hope that this Consultation paper will generate useful response from all the stakeholders. I request that written comments on this paper may be furnished to Secretary, TRAI by 18TH December 2000. For any further clarifications, Adviser (Mobile Networks) or Deputy Adviser (Mobile Networks) may be contacted on telephone nos. 3357815 and 3736515 respectively. The fax nos. are 3738708 and 3356083; email: trai@del2.vsnl.net.in.

(M.S. Verma)
CHAIRPERSON

New Delhi
December 6, 2000

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ABSTRACT

New Telecom Policy 99 framework was announced on 26.3.99. Pursuant to the provisions of NTP 99, the Department of Telecommunications, Government of India (DOT) has written the following two letters to TRAI in connection with radio paging services,

A. Letter No.843-119/98-BS-III dated 19th May, 1999 (Annex-I) regarding recommendations of TRAI on issue of fresh licenses for Radio Paging service providers.

B. Letter No.843-119/98-BS-III dated 20th September, 1999 (Annex-II) regarding recommendations of TRAI in regard to license fee arrangement for migration of existing radio paging licensees to NTP-99 regime.

Letter dated 19/5/99 at A above conveyed the following as envisaged in NTP 99,

- Radio paging service providers (RPSP) shall be granted separate license on non-exclusive basis for each service area of operation.
- In terms of NTP-99, licenses would be awarded for an initial period of 20 years and will be extended by a further period of 10 years thereafter.
- The service area would be categorized as per existing structure.
- The Radio Paging Service Providers (RPSPs) shall be eligible to obtain license for any number of service areas.
- The entry of more operators in a service area shall be based on the recommendation of TRAI who would review this as required and not later than every two years.

The above letter also sought the recommendations of TRAI on the following issues keeping in view the objectives of NTP 99,

- Appropriate level of Entry fee.
- Basis of selection of new operators.
- Percentage of revenue to be shared with the Licensor for different service areas of operation.
- Definition of revenue for the purpose.
- Views on any other issue considered relevant.

Letter dated 20/9/99 at B above conveyed the following decisions taken by the Government,

- It has been decided to permit migration of existing licensees of Circle Radio paging Service Licenses (for the Circles Andhra Pradesh, Gujarat, Maharashtra, Karnataka, Kerala, Tamilnadu, Himachal Pradesh, Punjab

and Haryana) to NTP-99 regime as per offer of migration (annexed to Annexure II).

- Under the Scheme of Migration, Govt. may issue additional licenses in these circles in the vacant slots as also new licenses as per migration package in these circles.
- The issue of more licenses in a service area will be based on the availability of spectrum and on the recommendations of TRAI who would review this as required and not later than every two years.
- For City Radio Paging Service, migration package is not being implemented as all licensees in none of the service area have accepted the package migration offer.
- The bids for the vacant slots as also for new licenses will be invited as per NTP-99 regime i.e. one time entry fee plus percentage share of revenue as license fee. Decision on the percentage share of revenue will be taken on receipt of TRAI recommendations.
- The cut off date for change over to NTP-99 regime for the existing paging service providers (in whose case the package is being implemented) will be 1.8.1999. Starting from this date, the percentage of gross revenue to be paid towards license fee will be same as would apply in future to the new licensee(s) in the same service area.
- The license fee dues payable upto 31.7.1999 would be treated as the Entry Fee for the existing operators.
- The new operators will bid for the Entry fee.

The above letter sought the following additional recommendations from TRAI,

- Licensing fee arrangement (revenue share) for the existing Circle Radio Paging Service Licensees to be made applicable w.e.f. 1.8.1999 (in whose case the migration package is to be implemented).

  The same percentage of revenue share will be made applicable to the new licensees of Circle Radio Paging Service.
- The definition of revenue for the above purpose.

This Consultation Paper is intended to raise public debate on the issues relevant for formulating TRAI's recommendations in the matter. This paper provides the information on the RPSPs in India. Chapter 1 deals with background and includes policy framework, technologies, impact of developments in other competing wireless applications like CMTS and IMT 2000 and status of radio paging in other asia pacific countries. Chapter 2 deals with Radio-Paging industry in India. Chapter 3 deals primarily with the RPSP's perception on the problems faced in radio paging operators and the demands of RPSPs. Chapter 4 addresses the financial position of RPSP companies and issues related to their financial viability. The aspects that should be kept in view while considering recommendations related to licensing have been discussed in Chapter 5. The issues identified for public debate have been shortlisted in Chapter 6.

CHAPTER – 1

BACKGROUND

1.1 Background:

The wireless communications industry has experienced tremendous developments in the past decade. Remaining connected while on move is fast becoming a necessity rather than a luxury. Radio paging is one such means, which is used to provide an individual with some sort of connectivity while on move. Radio paging, providing a limited communication facility, traditionally had the advantage of a cheaper cost. It was therefore more affordable as compared to other means of mobile communication like cellular mobile telephony. Radio paging is a very useful tool for an employer so that the intended employees may be contacted as required at a relatively cheaper and fixed cost. In addition any skilled worker also derives value from paging service by remaining available on call even while one is away from routine workplace.

The paging industry however, has recently been overshadowed by developments in cellular technology. The cost of the Cellular Telephony is coming down very fast. It is becoming more and more affordable thereby reducing the advantage paging had with lesser costs. Also it has developed several new features such as data transfer and access to Internet browsing. Most of the services being offered by radio paging industry are being offered by cellular mobile Telephony also. As such, the radio paging industry which is struggling hard to grow may have its targeted customer base generally remaining limited to those who cannot afford Cellular Mobile Telephony but who wish to remain connected while away from the normal workplace or home. The paging services have potential of service provision at a much cheaper rentals (Annex VII) as compared even to the basic telephony. They thus can offer affordable communication facility (in conjunction with availability of Public Call Offices or Village Public Telephones) to large masses with relatively low paying capacity whose communication needs may presently be very limited but who wish to remain connected at a very low cost.

The outlook for radio-paging industry is not considered very encouraging in the developed countries because of the competition with cellular mobile telephone services (CMTS). There is however, a vast difference in the levels of income and thus in affordability for a service between the people of India and those of developed countries. Thus what is true for a developed country may not necessarily be true for a developing country like India. The example of China PR (ref. para 1.5) may be seen in this context where the number of pagers are estimated to be reaching 100 million mark in the year 2000. The need for the

development of the radio-paging industry in India should thus be seen in the specific context of our country.

1.2 Policy Framework in India:

The Government of India announced on 26.3.99, the revised policy framework for the Telecom sector in India. The objectives of the New Telecom Policy 99 are as under:

- Access to telecommunications is of utmost importance for achievement of the country's social and economic goals. Availability of affordable and effective communications for the citizens is at the core of the vision and goal of the telecom policy.
- Strive to provide a balance between the provision of universal service to all uncovered areas, including the rural areas, and the provision of high-level services capable of meeting the needs of the country's economy;
- Encourage development of telecommunication facilities in remote, hilly and tribal areas of the country;
- Create a modern and efficient telecommunications infrastructure taking into account the convergence of IT, media, telecom and consumer electronics and thereby propel India into becoming an IT superpower;
- Convert PCO's wherever justified, into Public Teleinfo centres having multimedia capability like ISDN services, remote database access, government and community information systems etc.
- Transform in a time bound manner, the telecommunications sector to a greater competitive environment in both urban and rural areas providing equal opportunities and level playing field for all players;
- Strengthen research and development efforts in the country and provide an impetus to build world-class manufacturing capabilities;
- Achieve efficiency and transparency in spectrum management;
- Protect defense and security interests of the country;
- Enable Indian Telecom Companies to become truly global players.

NTP-99 further states that the new policy framework, which seeks to significantly redefine the competitive nature of industry, would be applicable to new licences. It also states that it is Governments intention to satisfactorily resolve the problems being faced by existing operators in a manner, which is consistent with their contractual obligations and is legally tenable.

The NTP-99 envisages the following in respect of Radio Paging Service Providers (RPSP):

- Direct interconnectivity between licensed RPSPs and any other type of service provider in their area of operation including sharing of infrastructure.
- Interconnectivity between service providers in different service areas shall be reviewed in consultation with TRAI and the same would be announced by August 15, 1999 as a part of the structure for opening up of national long distance.
- Granting of separate license, on a non-exclusive basis, for each service area of operation for an initial period of twenty years and will be extended by additional periods of ten years thereafter. For this purpose, the service areas would be categorized as per the existing structure.
- The RPSP can obtain licenses for any number of service areas.
- Review of spectrum utilization from time to time keeping in view the emerging scenario of spectrum availability, optimal use of spectrum, requirements of the market, competition and other interest of public.
- Entry of more operators in a service area to be based on the recommendations of TRAI who would review this as required and not later than every two years.
- The radio-paging licensees to pay a one-time entry fee.
- Basis for determining the entry fee and the basis of selection of additional operators, to be based on the recommendations of TRAI.
- Level of entry fee, to be based on the recommendations of TRAI.
- License fee as a percentage of revenue, to be based on the recommendations of TRAI.
- TRAI may also examine and recommend the revenue sharing arrangement between RPSP and other access providers subject to technical feasibility.

Pursuant to the announcement of the new Telecom Policy – 1999 and in view of the offer of migration to NTP-99 Regime given to city and circle Radio-Paging Service licensees, DOT has conveyed that the Government has taken the following decisions,

- Permit migration of existing licensees (for the circles Andhra Pradesh, Gujarat, Maharashtra, Karnataka, Kerala, Tamilnadu, Himachal Pradesh, Punjab and Haryana) to NTP-99 regime as per offer of migration. Under the scheme of Migration, the Government may issue additional licenses, in these circles in the vacant slots as also new licenses as per the migration package in these circles. The issue of more licenses in a service area shall be based on the availability of spectrum and on the recommendations of TRAI who would review this as required and not later than every two years. For the city Radio Paging service, Migration Package is not being implemented as all

licensees in none of the service area have accepted the package migration offer.

- The bids for these vacant slots also for new licenses will be invited as per NTP-99 regime i.e. one time entry fee plus percentage share of revenue as license fee. Decision on the percentage share of revenue will be taken on receipt of TRAI recommendations.
- The cut off date for change over to NTP-99 regime for the existing circle paging service providers (in whose case the package is being implemented) will be 1.8.1999. Starting from this date, the percentage of gross revenue to be paid towards license fee will be same as would apply in future to the new licensee(s) in the same service area. The license fee dues payable upto 31.7.1999 would be treated as the entry fee for the existing operators. The new operators will bid for entry fee.

1.3 Technology:

1.3.1 The pager contains a radio receiver permanently tuned to a single radio frequency. Every unit is given its own unique identity called Radio Identification Code (RIC). This code is transmitted to alert the pager, which responds when it recognizes its own identity. The message presented to the user depends on the type of the pager.

Types of signaling formats determine the capacity and the speed of paging systems. Like all other wireless systems, radio paging has also evolved from slower speed analogue systems to high-speed digital systems. The analogue systems used tone only formats. They included Two tone, three tone and five tone signaling. The speed also increased from 5 seconds to 0.22 seconds to alert the pager. The Golay signaling format developed by Motorola allowed alphanumeric characters to be transmitted. Golay sequential coding developed in 1970s was one of the first digital systems.

1.3.2 **P**ost **O**ffice **C**ode **S**tandard **A**dvisory **G**roup (**POCSAG**) was developed by British Post Office (**B.P.O.**). It allows transmission at higher rates of 512 to 2400 bps. It also allows 15 tone only pagers, five seven-character display and one 40-character display per second and provides error correction. It can handle up to two million addresses per carrier. This is now the most widely used system.

1.3.3 **E**uropean Community developed enhanced Radio Message System (ERMES) in 1990. It was developed with international roaming in view and is capable of delivering messaging for Alphanumeric, Numeric, Tone and transparent data paging. In 1994, it was approved by ITU as the first recommended paging protocol for international paging. Its' features included closed user groups, information services, urgent message option and indication, call diversion and transmission of up to 64 kbps. It is four times faster than

POCSAG when transmitting 40 character messages and 2.5 times faster when transmitting ten digit messages.

1.3.4 **FLEX** protocol; introduced in 1993 by Motorola is a high-speed protocol, which offers higher data transmission as compared to other standards. It has been adopted in all geographical parts of the world. It operates at three different speeds, 1.6, 3.2, and 6.4 kbps. Using Flex system, a service provider can handle typically around 600,000 numeric pagers per channel. The protocol has the capacity to support five billion addresses. It can coexist with POCSAG system, which would require only upgrades to their paging terminal and control equipment to introduce the Flex protocol at 1.6 kbps. As the subscriber demand increases, the system can be upgraded to 3.2 and then to 6.4 kbps. In addition, Flex technology provides accurate message delivery by offering protection from fading conditions. It can handle pure tone alert, numeric, alphanumeric and unformatted binary data and very long messages can be segmented in to packets of 220 bytes. In a Flex cycle, 128 frame are transmitted in 4 minutes. All data intended for a particular pager is scheduled in to a pre-defined time slot. The Flex protocol pager thus decodes one or more frames selectively over each Flex cycle. This helps in achieving much longer battery life.

1.3.5 **Value Added Services:** One of the important benefits of paging is that it can be integrated with other services to further enhance the benefits of mobile communications. Examples of such services can be Internet and E-Mail, Voice Messaging, Connecting alphanumeric pager to PC or printer, receptionist service, recording own greeting, personal greetings, Corporate answering, group call, message retention and inquiry etc.

1.3.6 International Telecommunications Union **(ITU)** has made the recommendations related to radio-paging on the following:

1. ITU-R, M.539-3: Technical and operational characteristics of international radio-paging systems.
2. ITU-R, M.584-2: Standard codes and formats for international radio paging.

Such recommendations play a very useful role in the process of standardization in the industry. In addition ITU has made a report (study group 1 Question 3, ITU-D) “Impact of the introduction and utilization of new technologies on the commercial and regulatory environment of telecommunications”. In that, it has considered possible ways forward for the radio-paging systems. This covers paging today and its future including new applications and services and markets and marketing outlets including global market opportunities.

1.4 3rd generation Mobile communication: The global development in wireless communication is leading it to have multimedia capability. ITU is working on the modalities of IMT-2000 (International Mobile Telecommunications - 2000). IMT-2000 are third generation systems that aim to unify the diverse systems we see today in to a radio infrastructure capable of offering a wide range of services around the year 2000 in many different operating environments. IMT-2000 is aimed at offering the services available in the fixed public network as far as possible, bearing in mind the characteristics of the fixed networks and mobile radio environment. Similar to the developments in Cellular Mobile Telephone Services, IMT-2000 may also impact the radio paging industry substantially. Limited service features of the radio-paging services may result in serious erosion in the subscriber base of this service (as a stand-alone service) if it does not position itself suitably at the earliest. All this will require modernization in the radio-paging service network and necessary flexibility to ensure availability of a feature rich radio-paging service. It will need additional investment in the radio-paging industry.

1.5 Radio paging in other Asia Pacific countries:

The paging sector is experiencing a good growth in China PR. At the end of 1993, there were five million subscribers. At the end of 1997, there were 35 million subscribers. It was expected that by the year 2000, the number of paging subscribers would reach 100 million. In March 98, China has awarded the contract for final phase of nationwide paging network backbone project. This will facilitate Flex based network to link all 31 provincial capitals on a common paging network backbone. Coverage will then be extended to other cities in each province.

In Japan, NTT DoCoMo and other 31 companies provide radio-paging services. The service has shown a decline. After a fall of 15% from previous year, Japan had 8.98 million paging subscribers in Dec. 1997. At the end of December 98, the subscriber base was reduced to 4.5 Million.

Paging services had achieved a very high penetration of 37% in Republic of Korea. KMT a subsidiary of SK Telecom is the only operator offering nationwide services and commands almost half of the market. There are ten more companies operating on a regional basis. The growth was brought about by fierce competition and advancements in the services e.g. e-mail, bank balance updates and information on demand.

Singapore had one of the highest paging penetration of around 44% of the population in April 98. High quality service and the focus on the younger customers are being looked at as the key to market making. Singapore Telecom radio-paging network provides for automatic paging services which support numeric, alphanumeric and two way paging. The two way wireless data

communications system is supported by the public mobile data network, DataRoam. In addition, several other paging companies are also providing paging services.

In Thailand, there are over 1.3 Million paging subscribers. Several companies compete to provide the services. Several value-added services like password, morning call, stock-alert stock broadcast, moneylink, reminder, secretarial service etc. are provided by them.
(Ref: APT Yearbook 1999)

CHAPTER – 2

RADIO PAGING INDUSTRY IN INDIA

2.1 Background:

Radio Paging service was opened up in India in mid 1992 through open tendering process for a ten year license period. Tenders were invited for the 27 cities in the first round and for 19 circles (excluding the cities already covered) in the second round. In the bidding operation, the highest bid was automatically accepted and all the other bidders were asked to match it. This helped in maximizing the revenue for the Government from license fee. It also helped in introducing multiple paging operators in each service area. For the cities, the license fee for the first three years was to be paid in three installments with a provision for review of license fee for the forth year onwards. For the circles, the license fee to be paid over a period of 10 years was fixed initially. In India, the first Radio-Paging service started in Chandigarh in March 1995.

2.2 Salient Features of Radio Paging Licenses: The salient features of the license in the context of the present reference are as follows;

2.2.1 **The radio paging service has been defined as**,
Radio paging system is a non-speech, one-way personal selective calling system with alert, and also with defined message such as numeric and alphanumeric messages. Network shall be able to provide the following type of services:

1. Tone and vibration with numeric display.
2. Tone and vibration with alphanumeric display.

The pager shall have the basic capability of receiving, storing and displaying numeric and alphanumeric messages.

2.2.2 The **service area** for city paging licenses had generally been similar to one defined for the respective telecom district. For the circle paging, the service area was the area of the respective telecom circle. The cities for which city paging license was granted were excluded from the service area of circle paging license.

2.2.3 Licenses were granted by the Licensor (Government) on non-exclusive basis to establish, maintain and operate Radio paging service upto the subscriber's Terminal connection in the area. The number of licenses in a service area had however been fixed.

2.2.4 Separate licenses were granted for circles (generally co-terminus with state). Important cities were given separate city operation licenses. The areas for which a city license was issued were excluded from the areas of the licenses for circles.

2.2.5 The licenses were granted initially for a period of 10 years.

2.2.6 The license fee was based on a bidding process. For circle operators, it was fixed for all the 10-year period. The city operator's license fee was fixed for the initial 3 years. A review was to be made for the license fee of city paging service providers after 3 years. After review the license fee for the city-paging operators has been fixed at 5% for 4th and 5th years.

2.2.7 A separate license shall be required from the WPC Wing of Ministry of Communications. Initially one frequency with adjacent channel spacing of 25 kHz would be assigned on case by case basis. Use of second frequency would be considered upon suitable justification provided by the licensee.

2.2.8 In case licensee fails to bring the service or any part thereof into commissioning with in the period prescribed for the commissioning, Authority shall be entitled to recover Rs.1 Lakh for each week of the delay or part thereof, subject to maximum Rs. 20 lakhs for each service area. For delays of more than 20 weeks the license will be terminated.

Liquidated damage charges have since been rationalized by DOT on 15/5/98. In-case the licensee fails to bring the service or any part thereof into commission within the period prescribed for commissioning, Authority shall be entitled to recover Rs. 1 lakh for each week of the delay or part thereof subject to a maximum of either,

- Rs 15 lakhs in the case of city paging services against first tender and Rs. 20 lakhs in respect of paging services against all subsequent tenders

Or

- 50% of the 1st years license fee

whichever is the lower of the two above. For delays of more than 20 weeks, the license will be terminated.

2.2.9 The licensee may obtain the incoming junctions for the interconnection between paging control terminal and the fixed network by applying for in the normal course to local office of DOT/MTNL, on payment of normal prescribed charges. It has been amended later to that licensees may directly apply for these leased lines/junction lines to the field units and the field units may provide the same as per the terms and conditions as applicable from time to time.

2.2.10 The licensor may at any time revoke the license by giving a notice of 90 days for circle paging (60 days for city paging) on the breach of any of the terms and conditions of the license agreement.

2.2.11 The ceiling Tariff was fixed. The ceilings fixed on rental were Rs. 150 for both Numeric and alphanumeric pagers. This ceiling has since been revised by TRAI to Rs 175 and Rs 300 per month for numeric and alphanumeric pagers respectively.

2.2.12 In case of interruption of service lasting for more than 72 hours, the licensee shall give an appropriate rebate to the subscribers of the service.

2.3 License fee: The license fee for radio-paging services was initially fixed by bidding process. No entry fee was to be paid. The bidders were asked to match the highest bid of license fee for grant of a license. The license fee payable by city paging and the circle paging operators are different. Further, for the operators migrating to NTP 99 regime, the license fee will be modified w.e.f. 1.8.99.

2.3.1 For city paging, the license fee was fixed for the first three years of operations. It was to be paid as follows:

First Year	:	One sixth of the three year paging levy.
Second Year	:	One third of the three years paging levy.
Third Year	:	One half of the three years paging levy.

The fourth and fifth year's license fee has been fixed at 5% of the gross revenue after seeking the recommendations of TRAI. The details of the license fee for the city paging service providers are available at annexure III.

2.3.2 For the circle paging, no category was fixed. The license fee for ten years is payable annually in the following ratio:

1, 1, 1, 1, 1.2, 1.2, 1.2, 1.2, 1.2

Thus, if the whole amount of the license fee payable in ten years is divided into 11 parts, one part each is payable for first five years. For the balance 5 years, 1.2 times a part is to be paid making the total payment matching with the committed license fee for the ten years. The details of the license fee for the circle paging service providers are available at annexure IV.

2.4 TRAI's Recommendations on radio paging:

DOT made a reference to TRAI on the issue of quantum and the structure of license fee for the city radio paging service providers for the duration of the

balance license period, on completion of their first three years of operation, TRAI had, after a consultation process (consultation paper No. 98/6 dated 21st December 1998, available at TRAI website (www.trai.gov.in)) given its recommendations to DOT. These recommendations of TRAI are also available for reference at the above-mentioned web-site. The salient features of the recommendations included,

- The quantum of license fee for radio paging service providers in cities be based on revenue sharing arrangement.
- It should not be more than 5% of the network revenue.
- Network revenue for this purpose has been defined as the gross revenue derived from the licensed activities, including revenue on account of value-added services and supplementary services. It will not include proceeds of any service tax collected by the service provider and passed on to the Government. It will also not include revenue on account of sale of handsets. In case the service provider subsidizes the sale of handsets by giving rebate on the rental tariff, the revenue thus foregone will be added to the gross revenue.

TRAI had then undertaken a study on viability assessment to review the financial performance of the Radio Paging service providers during the first three years of their operations. The viability study then revealed that high license fee during the first three years of operation of city paging service providers had impinged adversely on the financial viability of the operators, which in turn affected the network expansion.

The license fee for the city-paging operators for the fourth and fifth years has since been fixed as 5% of the gross revenue.

2.5 Implementation of Radio Paging Licenses:

2.5.1 The details regarding existing radio-paging licenses for city paging operators are available at annex III. Similar details for the circle-paging operators are at annex IV. While the paging services are operating in all the 27 cities for which licenses were issued, the same is not true for circle paging operations. Primarily as a consequence of cancellation of licenses due to non-commissioning of the services, there are no licensees left in some of the circles. Such circles are Andaman & Nicobar, Bihar, North East, Orissa, and West Bengal.

2.5.2 Starting from December 96, till now 29 radio-paging licenses (cities-15, Circles-14) have been cancelled by DOT. The cancellation was done on the following grounds:

Non Commissioning of service -	26	Licenses
Default in Payment-	3	Licenses

In addition, one company has requested DOT for surrendering their licenses for the cities of Madurai, Coimbtore, Vishakhapattanam, Rajkot and Jaipur. Another such request has been submitted by another company for their radio-paging licenses for the cities of Ahmedabad, Pune, Chandigarh, Hyderabad, Bengalore, Vadodara and Ludhiana.

2.5.3 In this context, it may be recalled that the initial licensing of radio paging had been done at the time of beginning of the opening up of the Telecom services. The industry had a lot of enthusiasm to seek a license as far as possible. Moreover there was no entry fee to be paid upfront. Thus there was no sizeable deterrent to discourage non-serious players from seeking a license.

In addition it may also be observed that poor financial performance and low market penetration of the paging service providers might also have discouraged the license seekers from continuing to hold and put additional investments.

2.6 Tariff:

2.6.1 The licences of radio paging services provided for a rental ceiling for both numeric and alpha-numeric pagers as Rs 150 per month. This did not include rental charges for the pager, which the subscriber was free to obtain from any source. A registration charge of Rs 500 was permitted which was to be adjusted against the security deposit. Security deposit of Rs 2000/- was permitted at the time of provision of service. All the above were ceiling tariffs. Rental ceiling was irrespective of the number of pages.

2.6.2 Subsequently, TRAI had, by the Telecommunication Tariff order 1999 dated 9.3.99 revised the rentals as 300 per month for alphanumeric and 175 per month for the numeric pagers. This did not envisage any revenue sharing for the paging service providers. Further, the TTO 1999 stated that, “With respect to all other matters relevant to tariff including supplementary services, value added services within the paging service and the periodicity of the billing cycle, there will be forbearance, subject to the reporting requirement.”

2.7 Present Status:

As on 31.3.2000, there were 660,510 radio-paging subscribers in the 27 cities and 73152 subscribers with various circle-paging operators. The three cities having the largest customer base were Mumbai (164,356), Delhi (101,018) and Chennai (72,690). The largest customer base in circle operations was in

Tamilnadu (19506), Karnataka (12329) and Maharashtra (9210). It may be seen that whereas Mumbai alone had 164,356 subscribers, the balance whole of Maharashtra had only 9210 radio-paging subscribers. Almost half of the paging customers in all the circles were in Mumbai, Delhi and Channai taken together. The growth of Radio Paging in the circles was very dismal. The position with reference to city operations though better is still far from satisfactory with a very low average customer base in most of the cities. In as much as 15 cities out of 27 cities, for which licenses have been issued, average customer base per service provider is less than 3000.

2.8 Growth Rate:

Starting from 1995, radio paging had a good growth in the initial years. Later, the rate of growth in subscriber base has shown a decline.

The growth rate of radio-paging customer base with the service providers had been as follows:

	RATE OF GROWTH (%) IN SUBSCRIBERS BASE					
SERVICE PROVIDER	Actual			Projections		
	1997-98	1998-99	1999-00 *	2000-01	2001-02	2002-03
A	54.86	22.91	-2.71	-0.38	0.3	0.47
B	26.54	-13.93	-9.89	29.97	16.91	11.35
C	173.97	3.8	5.01	5	5.01	5
D	18.39	10.93	-8.43	8.52	7.37	
E	84.66	6.06	5	5.01	5	5.01
F	76.57	-3.81	5.01	5	5	5.01
G	69.88	2.68	5.01	5	5.01	5
H	-4.81	-14.1	9.9	7.15	9.64	11.01
I	40.39	12.06	-12.04	10	10.01	10
J	0	-11.2	-31.02	28.81	29.17	29.42
K	31.85	13.38	5.01	6	7	8
L	22.65	5.43	103.56	33.42	29.51	21.63

* Based on projections received in March 2000.

From the above it is clear that there is a perceptible decline in the rate of growth in subscriber base with most of the radio-paging operators. There are exceptions however to this trend. In this context it may also be relevant to note that effective 1st May 1999, radio-paging companies were allowed a considerable increase in tariff ceilings. Rental ceiling for the alphanumeric pagers was raised to Rs 300 per month (considering the cost base) from the then prevailing ceiling of

Rs 150 per month. The projected subscriber base growth is also quite subdued. Several service providers have experienced even a negative subscriber growth.

In the earlier exercise by TRAI for recommendations regarding city paging, a set of similar projections was provided by the industry. It may be worthwhile to compare the projections made then and what could actually be achieved. The achievements clearly fell far short of the projections made only about a couple of years before.

S.No.	Symbol for the operator	Customer Base Projected	Customer Base Achieved *	Network Revenue Projected	Network Revenue Achieved *
1.	A	141408	87427	56.6	28.69
2.	B	18860	9988	5.49	2.84
3.	C	83135	41346	26.01	12.11
4	D	123201	74000	45.23	25.05
5	E	35448	23210	11.31	6.55
6.	F	33597	19966	10.68	4.68
7.	G	32097	21460	10.24	5.17
8.	H	74440	70826	26.21	19.58
9.	I	257635	166884	75.38	58.99
10.	J	108000	32472	33.8	11.47

* The achieved figures are generally the projections received in March 2000 for the year 1999-2000.

2.9 Spectrum:

2.9.1 National frequency allocation plan-2000 provides the following specific spectrum for radio paging services in India.

"The requirement of wide area radio paging systems will be considered in the frequency band 146.45-147.95,151.5-153, 164.5-166.5 and 171-173 MHz. The frequency spots 146.5625, 146.6125, 151.6125, 151.6625, 151.6875, 1653625 (Delhi only), 165.4625, 165.6625, 166.1125, 166.1625 (except Delhi) 166.2375 & 166.2875(Bombay only), 1666.3125, 1666.3625, 1666.3875, 1666.4375, 172.8635,172.8875 and 172.9375 MHz, are earmarked for wide area radio paging only. The use of frequencies in the frequency band 151.5-153 MHz including the frequencies earmarked above in this band have appropriate geographical restrictions of operations around GMRT, Pune."

"The requirement of onsite radio paging systems and talk-back facility will be considered in the frequency band 150.05-150.5 MHz. The frequency spots 150.3, 150.9 and 151.07 MHz are earmarked for onsite paging and 151.15,151.55 and 150.6 MHz for talk back facility for such systems."

"The requirement for wide area Radio Paging systems, two way radio systems including voice paging systems may be considered in the frequency band 276-280 MHz with talk back frequency band 917-921 MHz up to maximum of 1MHz in each band."

"Requirement of link frequencies for Radio Paging Service will be coordinated in the frequency band 450-480 MHz."

"The frequency spots 461.775, 461.825, 461.875, 461.925, 461.950MHz are earmarked for Radio Paging Systems for on-site uses only."

2.9.2 As per the license, initially one frequency with adjacent channel spacing of 25 kHz would be assigned on case by case basis. Use of second frequency would be considered upon suitable justification provided by the licensee.

2.9.3 Paging services had traditionally been operating using POCSAG 1200 protocol. POCSAG 1200 as a thumb rule can support around 24000 subscribers. The actual figures however, depend on traffic conditions. FLEX 6400, by virtue of its high speed provides for almost five times the traffic capacity. In addition, frequency reuse can also be considered for increasing the system capacity vis a vis spectrum in compelling circumstances.

2.9.4 Radio-Paging service critically depends on the availability of spectrum. It needs to be seen if the available spectrum is sufficient for meeting the demands of all the present and prospective operators. The technological advancements like Flex are also helping in improving the spectrum efficiency. The issue to be seen is if the availability of the spectrum as above can be considered as adequate for unrestricted competition in the industry or it is a factor causing restrictions on the level of competition in radio-paging industry.

2.9.5 Considering the availability of around 7 MHz bandwidth for radio paging services and that 25 kHz spacing is required between the spot frequencies, about 280 spot frequencies can be considered as available in any area. In addition, frequencies may be made available if required by local coordination. Considering each operator to be allotted two spot frequencies on an average, around 140 operators can be accommodated in any area. In terms of subscriber base, if the initial installation is done using POCSAG only, 24000 x 140 = 3,360,000 subscriber can be accommodated with their first spot frequency. If Flex is used for the second frequency then up to an additional 120,000 x 140 = 16,800,000 customers can be accommodated. This capacity will increase substantially to a total of 33,600,000 if flex is considered as being used by all. Presently, it may be observed that the area with highest number of paging customers i.e. Mumbai (with 164356 customers) has 5 radio paging service providers. The above is only to illustrate the dependence of the level of competition in radio paging in India on the availability of spectrum.

While considering spectrum availability, it should also be kept in view that the pagers are frequency restricted. They may require re-tuning if they have to work with other frequencies. It poses problems for roaming between the areas served even by the same company. This is because it may not be possible at times to assign a common frequency in all such areas. Also, because of some frequencies already being used in a particular area for some other purpose, it may not be possible to have the entire assigned range available for paging in a specific area. The important exceptions of this type as have been mentioned in NFAP 2000 are listed above in the beginning of this para for Delhi, Mumbai and Pune.

CHAPTER – 3

PROBLEMS IN RADIO PAGING OPERATIONS

3.1 From the launch of radio paging services in India in March 1995, a high subscriber growth was recorded by the paging industry initially. The overall performance of the industry however is far from encouraging both in terms of financial viability and also in terms of growth. The subscriber base of the Paging Industry in India is very low today. As per their submissions and discussions the radiopaging operators, they are facing a number of problems. A number of radio-paging licenses have already been cancelled and two companies have surrendered several licenses. The views of the industry on the problems faced can be summarized as follows:

3.2 Competition with CMTS Operation

3.2.1 Overlapping targeted customers:

There had been substantial developments in Cellular Mobile Telephone Services in the recent past. The service features have expanded to cover almost anything that is desired from a communication terminal. The cost of communication is also coming down considerably. Considering even the present costs of the terminals and the tariffs of the alphanumeric paging and that for the cellular services, there is hardly a case for substantial preference towards paging on affordability basis. Thus there is only a marginal population that will prefer paging because they cannot afford CMTS services. This seems to have caused low subscriber base for radio paging services. The capacity utilization with radio paging operators had been very low. Lowering the tariffs substantially may perhaps increase the demand for paging substantially. The paging operators however feel that it will further increase their losses, which are already staggering. In this context, the developments related to 3rd generation wireless systems may also be kept in mind wherein the cellular customers will get substantial addition in the utility of their services.

Radio Paging and Cellular Mobile Telephone Services are the two generally used means of Mobile communications. The industry has contended that paging services are very badly hurt since the CMTS also provides paging service through calling line identification and short message services without paying a corresponding license fee for this value added service. As a result, the cellular operators are able to provide the above at a much cheaper rate. This takes away prospective customers from paging service providers. This, however, needs to be seen in the light of migration by CMTS operators to NTP 99 regime wherein they will be paying license fee on a revenue sharing basis. Thus, on the revenue from the value-added services also, a license fee would be paid which may be higher

than that for paging services. In any case however, when a cellular subscriber on getting an incoming call does not answer and looks at on calling number only, the paging services are extended to him free of any direct cost.

3.2.2 Price of Pager Instruments:

The industry has contended that the biggest constraint in subscribing the paging service for people who belong to lower segment of society is the high entry cost on account of unaffordable pager price. Paging handsets are currently available as Numeric, Alphanumeric two-liner, alphanumeric four-liner etc. The paging handsets are either imported wholly or assembled in India mostly using imported with slight value addition in India. The duties form almost 1/3rd cost of the pagers. Keeping this in view, industry had requested for reduction of customs and excise duties on the pagers to the minimum level, preferably to zero.

In the Budget 2000-2001 the customs duty on cellular phones was reduced from 25% to 5% but no such relief was provided for the pagers. The industry has contended that the pager being a tool of connectivity for the poorer section of society, the customs duty for the pagers should have been reduced to zero to make it increasingly affordable. The paging industry has indicated that as a result of the above concessions to CMTS operators, and not to the paging operators, the level playing field between these two services has been totally distorted in favor of cellular industry. The industry has requested that considering the low-income subscriber base, a reduction in custom duty on pager from the current high level of 55% to nil in order to lower the entry cost for a customer.

3.3 License Fee:

Industry has requested that in view of poor financial viability of paging operations, the license fee should be reduced to 0% or at best 2% for the existing circle paging operators. They have also requested to reduce the committed license fees obligations of city paging operators payable during the first three years by 70%. If it cannot be done for any reason, they have demanded that the outstanding dues be re-scheduled and made payable during the next 10 years in 40 quarterly installments without any future interest liability.

It is also demanded by the industry that in view of poor financial viability of the industry as a whole, the license fee for all the paging services (including city paging) should be brought to zero as in the case of Internet services. They have further contended that Internet deals with two-way text communication while paging deals with only one-way text communication.

Paging Industry today generates additional revenue for DOT through very short duration incoming paging calls of 20 to 25 seconds each. Even at the current

subscriber level it generates about two million such calls every day. In addition 50% of the paging calls result in return calls on the basic service network. All this results in increased revenue (available for revenue sharing by the Government) for the other service providers. IPSA of the view that lowering the license fee percentage will significantly widen the subscriber base, which in turn would bring more revenue to the Government. By lowering the revenue share percentage of the license fee in fact Government will get more money in absolute terms. This will improve the cash flow of the paging companies. This will enable them to clear the past dues early. It will also tremendously increase the economic activity and wealth generation potential of several self-employed people belonging to the relatively poorer sections of the society like plumbers, carpenters, electricians etc. This is because they would be able to subscribe to the services if they become more affordable. The viability analysis of radio paging operations has been dealt with in chapter 4.

3.4 Need for seamless linkage in a circle.

This becomes imperative since almost all organizations, Departments of Government, Police, Railways, Security Services and Corporates etc. are headquartered in the capital and have manpower housed at various locations through out the length and breadth of the State. Also, even the non-organizational subscribers commute from the major cities to outlying areas and vice versa. Currently, operators offering paging services in a State are different from those offering services in important cities of the State. This means that a paging subscriber is as of today unable to have seamless paging coverage when he travels between cities, towns and villages. Seamless linkage between all areas of the State is not only important and of prime utility, but will also substantially improve the usage of pagers and provide incremental subscribers in large numbers. This would also help circle-paging operators bolster their poor financial performance. Tie up of circle paging with city paging service providers doesn't seem possible since pagers are frequency specific. The circle-paging operators have requested that in public interest, they may be permitted to apply for and be granted the permission to operate paging services in the cities of the States in which they are currently offering the services. They have further submitted that by doing this, the utility of paging as a service, which is sub-optimal today will be enhanced exponentially. Being one of the most effective and affordable means of communications available to a large low income rural subscriber base, the death of the circle paging industry would seriously impact the goals that have been set by NTP-99.

3.5 Usage based revenue for RPSPs:

3.5.1 Paging Operators have contended that they should be given a part of the revenue collected by the PSTN Operators from calls to pagers. This may be a

significant way to reduce the monthly rentals for paging subscribers to make the service more affordable for them. IPSA has requested that calls to a pager may be considered a premium service and a charge of 2 pulses instead of 1 pulse may be introduced for paging. If a significant part of this charge is passed on to the paging operators, it will enable them to lower the rental for the paging subscribers bringing the service within the reach of the common man who belong to economically weaker sections of the society. This is likely to increase the customer base substantially. One of the circle-paging company operating in several circles has however objected to this on the ground that this will severely erode the subscriber base of circle paging operators.

3.5.2 ABTO, the association of basic telecom operators, has contended on this issue that either the existing non-revenue sharing arrangement should continue; or the calls from PSTN to paging should be charged at a higher level than the normal local call rate so that the revenue of the fixed service provider is not adversely affected. The reason cited is that tariff for basic services is not cost based and is heavily subsidized by long distance service. With the opening up of long distance services for the free competition, the revenue stream of fixed service providers will be depleted further. Thus sharing of revenue with radio paging service providers without increase in the call rates will further adversely affect the viability of basic service providers. They had earlier contended on this issue that the paging operators have to find out other means. One of the possibilities ABTO indicated was that no license fee should be charged from the paging operators.

The telecommunication tariff order 1999 (of TRAI, 9th March 1999) that revised the tariffs for paging industry to a considerably higher level than the then prevailing prices states,

> " For the present, the existing non-sharing arrangement shall continue."

3.5.3 Another option that can be considered is that like all other services there can be a usage charge on the paging subscribers. Thus the paging operator can also consider putting a small charge on usage basis in order to augment the network revenue. The customers of almost all other services pay for the usage generally on the calling party pays basis. In case of paging however it can be argued that being a terminating service only, the user of the pager gets the intended value/usage of the service when a paging message is received by him. Thus there is a case to consider usage based charging (which may be on a per call basis) by the service provider to a paging customer. The charts on financial viability of paging service providers based on getting a call charge (annex XV, XVI and XVII) may be seen in this context also. The license had provided for a rental ceiling that is irrespective of the number of pages. Subsequently, TRAI, while revising the rentals for Radio Paging by TTO 1999 have said the following in this regard:

"With respect to all other matters relevant to tariff including supplementary services, value added services within the Paging Service and the periodicity of the billing cycle, there will be forbearance, subject to the reporting requirement."

It may be seen that if a customer receives 60 paging calls in a month and pays Rs 0.20 per call to the paging company, his monthly usage based charges will be Rs 12/- only.

3.6 Interconnectivity between service providers in different service areas: Presently interconnection is permissible only through DOT long distance network. IPSA has requested that with the opening of NLD operations to private service providers also, the RPSPs should have all options open for utilising the network of any long distance service provider so as to achieve most economic networking for their traffic. They have stated that such long distance interconnectivity is required by the paging service providers so as to provide their subscribers with roaming facilities in different cities/ service areas. They have expected that it would be taken care of while giving final shape to opening up of national long distance communications.

3.7 Access to USO funds for Circle Paging:

3.7.1 The industry contends that if the rental of the pager can be brought down to of the order of Rs 50 per month coupled with the availability of a cheaper pager and easy access to PCOs, it may result in very high market for paging services specially amongst relatively lower income groups. Pagers and PCOs together may also be able to substantially provide for, in the immediate term, the communications requirements both of receiving a call and originating it. This may provide an immediate relief till the objectives of USO are achieved. The paging industry has also requested that circle paging be given access to the USO funds. In this context it may be noted that TRAI has already undertaken a study related to USO issues in which the comments of all the stakeholders are being considered.

3.8 Unaffordability for upgradations: Financial non-viability and low subscriber base is making it unaffordable for the Radio Paging Operators to go in for the internet related Mail and information services and value added services like voice paging and two way paging.

3.9 The restriction on transmitter power to 150 watts or less made increase in cost of network by having multiple transmitter network and forced operator to use costly network requiring leased line and UHF link. In this context it may be kept in view that the power levels of the transmitters are important from the point of view of causing interference with the other spectrum users even in the adjacent frequencies.

3.10 The circle operators were forced to collect the calls from each exchange by not giving 96xx out let at SSA center. Thus circle paging infrastructure cost went up in provision of expensive call collection network on leased line / MARR.

3.11 Paging operators were insisted to use same switch for large paging operations and small paging operations. This makes the small city non-viable, as its percentage of capacity utilization is very low.

3.12 Paging operators were asked to pay for the ACD (Auto Call Distributor) like in-dialing PABX. Radio Paging Operators are demanding that Incoming Junction terminated on ACD to be charged as individual line and not as in-dialing PABX.

3.13 Though the frequencies are available in all the cites, Paging operators were forced to invest in duplicate network (FLEX) instead of POCSAG infrastructure thus further affecting the viability of paging operation adversely. In this context the high capacity provided by Flex for the same spectrum use (see 2.9.3) may also be kept in view.

3.14 DOT has, vide their letter No 843-119/TRAI/98-BS III dated 4.9.2000 has intimated the following regarding radio paging service,

- The department has removed WPC charges of Rs 100 per subscriber per annum with effect from 1.7.2000.
- Custom duty has also been reduced.
- The opinion of Attorney General of India is being sought on the recommendations of GOT-IT related to issues of recovering outstanding amounts in installments, charging concessional rates of interest and giving six months extension in effective date.

3.15 All the above relate to improving the customer base by reducing the cost and improving the financial viability of the radio paging operators. In the present context the issues for consultation are,

- What should be done to improve the viability of Radio Paging operations?
- Will the charging for a call from PSTN to a pager at a higher rate per call and then sharing of the revenue collected by PSTN in an agreed ratio with the RPSPs be of help in the growth and in improving the financial viability of radio paging industry? If so what could be the basis of such sharing?

- Whether reduction in cost of paging services will significantly increase the customer base of the radio paging service providers?

CHAPTER – 4

VIABILITY OF RADIO PAGING OPERATORS

4.1 Since the beginning of the operations in March1995, the growth of subscriber base of Radio Paging operators was good in the initial years. Of late it has slowed down considerably. The main reason attributed to it is competition with cellular mobile services. Due to a not too significant difference between the costs, the fraction of population, which needs mobile personal communication and can afford radio paging but cannot afford cellular mobile services can only be small. CMTS services provide practically all the facilities provided by paging services. Another category of paging customers is of those commercial customers who need an incoming message only while on move. Requirement being of commercial nature the marginal cost difference also makes a difference to them in selecting the system. Paging also provides a means for the employers to limit the bills while keeping their employees accessible all the time.

4.1.1 Circle Paging versus city Paging:

The cases of circle paging and city paging are somewhat different when financial viability is considered. The two characteristics, which bring this difference in, are

- The circle-paging operator has to cover a large, dispersed area substantial portion of which includes the rural area and relatively smaller cities. This causes increased investment requirements for roll out.
- Increased difficulty in marketing resulting in higher operating expenditure and lower revenue.

Higher investment requirements, higher operating expenses and lower revenue base therefore make circle-paging operation relatively more difficult in terms of financial viability as compared to city paging.

It may also be kept in view that for most of the present operators, radio-paging operations are dominated by city paging operations (Ref. Annex III and IV). The financial analysis figures discussed hereafter should thus be considered in this light. Considering the case purely for circle paging may worsen the financial viability further.

4.2 Viability Analysis:

To study the financial viability of the radio paging operators, the Financial figures of various Radio Paging Operators as provided by them have been reformatted for the purpose of viability study on a uniform basis. The figures for the years 2000-01, 20001-02, 2002-03 are the projections given by the Operators.

The RPSPs, in around March 2000 provided the figures for 1999-2000. The viability studies of individual companies (without considering the impact of license fee) are given in Annex.V. The analysis is similar to what was done in the viability assessment in the previous study by TRAI in 1998. The figures available are on a gross level. They include various areas of operation of individual companies. The areas of the operations of individual companies are listed in Annex. III and IV. It may be noted that in their projections most operators have indicated either loss or only a marginal profit for next three years. It may at the same time be seen that by taking the operating expenses @ 40% of the network revenue, most of the companies become profitable. This can be facilitated only by demand in the market for the service whereby the realization and the volumes both may improve without any undue increase in the costs. An analysis of the industry under certain assumptions related to above has been provided in the later part of this chapter.

4.3 **Cost Details:**

The indicative prices for pagers can be taken as follows:

Alpha Numeric Pager

i)	Single line pager	Rs	1500
ii)	2-line Pager	Rs	1600
iii)	4-line pager	Rs	2000
iv)	Numeric Pager	Rs	1300

These figures, provided primarily by IPSA pertain to the period prior to the decision of the Government to reduce the custom duty on radio pagers.

Indian Paging Services Association (IPSA) has also indicated that there is a cost of acquiring pager subscriber, which varies between Rs 1200 to Rs 1500 depending on the city as well as the size of the network.

Annex VI gives the cost components in radio-paging operations that were greater than 1% of the network revenue. The most significant component is personal and administration cost. Around 30% of the network revenue goes under this head. Other important expenditure heads include “Network repair and maintenance” and “Advertisements and sales promotion”.

The details regarding typical investment requirements for setting up a paging network in a metro city based on the details provided by IPSA is enclosed in annexure VII.

4.4 **Variation of Operating Expenditure with subscriber base:**

Tables in Annexure XVIII provide details of variation in subscriber base and operating expenditure (opex) over 1998-99 and 1999-2000. The table also provides the variation of the components of opex. It is apparent that the relation between the increase in the subscriber base and opex is not same for all the operators. For RPSPs A,B,C,J and K only, the increase or decrease in subscriber base resulted in a corresponding increase or decrease in the opex. For RPSPs D and I the opex increased despite of reduction in the customer base. For RPSPs E,F,G,H and L, the opex decreased despite of increased subscriber base. This indicates that increase or decrease in opex is still a function of business plan of an individual RPSP rather than a direct function of subscriber base. Variations in the business plans may be a result of cost cutting due to losses, difficult marketing situation in general and difference in long-term market perception. For example, increased expenditure might be incurred on marketing and Advertising even with the same or marginally reduced subscriber base in an attempt to hold the market share.

A general increase had been there in personal & administrative expenses and Advertisement and publicity expenses. Network repairs and maintenance has shown a decline in general.

4.5 Projection Vs Achievement:

To assess the achievements of the industry over the previous assessment by TRAI in 1998, a comparison has been made below between the then projections provided by the RPSPs and the actual achievements for the year 1999-2000.

(Rupees in Crores)

S. No.	Symbol for the operator	Network Revenue Projected	Network Revenue Achieved *	Profit/ (Loss) Projected	Profit/ Loss Achieved *	% Operating Ratio Projected	% Operating Ratio Achieved *
1.	A	56.6	28.69	-1.68	-10.83	72	116
2.	B	5.49	2.84	-2.55	-2.07	131	81
3.	C	26.01	12.11	4.51	-0.41	70	103
4	D	45.23	25.05	15.14	-4.59	47	108
5	E	11.31	6.55	-2.27	-2.26	112	135
6.	F	10.68	4.68	-1.53	-2.46	109	143
7.	G	10.24	5.17	-1.93	-2.47	116	148
8.	H	26.21	19.58	-4.79	-15.83	92	119
9.	I	75.38	58.99	-2.8	-24.21	67	95
10.	J	33.8	11.47	-2.1	.63	106	63

* The figures are generally the projections received from service providers in March 2000 for the year 1999-2000.

From the above it is clear that the achievements of the industry had generally been far below what they projected barely 2 years before. From the above information it is also apparent that under the present operating circumstances, the viability of Radio Paging Operators is highly questionable. A number of licenses have already been surrendered/cancelled as has been indicated earlier in Chap 2.

Annexure VIII provides the details of growth of subscriber base of RPSPs, average capex and network revenue per subscriber, operating ratios and major components of expenditure for each company for the past. It also includes projections for next three years. The %-operating ratio of 8 out of 10 companies is more than 100%. At around 30% of the network revenue, the personnel and administrative expenses generally form the highest component of the cost. Other significant component of expenditure is Marketing and advertising expenditure. It ranges generally between 5% to 10% with lowest being 2.13 and highest being 14.29%. Network and repairs and maintenance cost show very high variations. It varies from 1.24% to 51.91 % of network revenue. However, in case of 5 of the operators it is less than 5%. Other overheads and miscellaneous expenses have also been reported as significant portion of opex by some of the operators.

4.6 Impact of license fee and the sensitivity of financial viability to it:

The impact of license fee on the projected profit and loss of the operators for next three years has also been projected in Annex.-X. This is based on the figures provided by individual operators. Clearly, the viability of the operators that is already very poor gets further affected adversely by increase in the percentage of the license fee. It may also be seen that the viability of the operations is questionable even without any license fee. The issue for consultation is,

To what extent is the license fee the causal factor for the poor financial viability of the radio-paging operators?

4.7 Capacity utilization in the Industry:

The most striking factor in the case of Paging Operators is the extremely low capacity utilization of most of the individual operators at a gross level. The capacity utilization of almost all the Paging Operators is less than 50%. In our country where affordability has a very important bearing on the penetration of a telecom service, the reduced burden to the customer should be considered as a prime driver for increasing the market size. High cost may lead to low capacity utilization and vice versa. A study has been included in this to indicate the possible impact of increased capacity utilization on the financial performance of the paging operators. It, in turn, also indicates the impact of reduction in rentals.

In developed countries, the cost of the cellular telephone is quite affordable to most of the people. However in developing countries like India, there can definitely be a vast user segment, for which affordability can primarily decide in favor of radio paging to remain connected while moving. The cellular services use spectrum a lot more than a pager. However due to low charging for spectrum in India, it does not create much differential in the costs of the two.

The analysis also considers the effect of a possible usage based revenue stream for RPSPs as discussed in para 3.5.

Following are the assumptions made to simplify the study.

i) The figures of % capacity utilization wherever not available have been taken from the previous study of TRAI. The figures of 97-98 have been adjusted proportionate to increase in subscriber base in 1999-2000 to get the capacity utilization for 1999-2000. In such cases it is assumed that the paging companies have since done no capacity augmentation.

ii) The following components of the OPEX will not be required to be augmented for increasing capacity utilization say upto 75%.

- Manpower and establishment.
- Network repairs and maintenance.
- Cost of leased lines. The figures of existing loading are not available. In some cases this may cause variation.
- Rents.

iii) Remaining components of the OPEX will increase by 10% of the increase in capacity utilization. This means that for 5% increase in capacity utilization, the increase in remaining components of OPEX will be 0.5%. Such remaining components of the OPEX include billing and customer service, bad debts, other overheads and miscellaneous expenses.

iv) The increase in revenue has been considered as the increase in rental only. No other revenue streams especially those from additional service features have been included.

v) The license fee for the additional subscribers has not been taken in to account.

vi) No additional charges towards WPC with increased capacity utilization have been considered. The radio-paging operators have presently to pay Rs 100/- per subscriber per annum for which there is no separate revenue stream. This charge has since been removed effective 1.7.2000.

vii) The proportion of Alfa Numeric and Numeric pagers remains the same while increasing the capacity utilization.

viii) There is no additional customer acquisition cost.

ix) No increase in CAPEX has been taken in to account for increasing the capacity utilization. The customer procures the pager instrument.

x) No impact of economy of scale has been considered.

xi) The financial charges for the losses incurred in 1999-2000 have not been taken in to account.

The purpose of this indicative study is to show that the paging industry, given the right environment can also possibly be a quite viable and flourishing industry.

This indicative study took the reported profit and loss without considering the license fee and WPC charges (Rs 100 per pager per annum. This has since been waived off). Additional revenue was added to profit/loss on account of projected rental income from the additional capacity utilization. Increase in opex under the assumptions as above has been subtracted to arrive at profit/loss under revised conditions. While considering additional revenue stream on usage basis, two calls per pager per day have been taken in to account. The impact of increased capacity utilization subject to above assumptions have been analyzed which indicates,

a) That a slight increase in capacity utilization is able to make most of the operators breaking even. (Annex-XI).
b) That profitability can increase at a high rate after the break-even. All the companies can earn substantial profits with a capacity utilization of 75% (Annex.XII).
c) That under the present circumstances, both low capacity utilisation and high capacity utilisation operators are showing losses. Reduction in network revenue on account of discounts and the subscriber acquisition costs may be partially responsible for it (Annex XIII).
d) That eight out of nine companies show profit with 75% capacity utilization even if the rentals are reduced by 50%. (Annex XIV).
e) Seven of the nine paging companies show profit with 50% capacity utilization even if pager rentals are reduced to 75%. If another revenue stream of revenue per call of around 0.30 per call is considered then eight out of nine companies come to the profit with a small loss remaining for the ninth company. (Annex XV).
f) Six out of nine companies can make profits with 60% capacity utilization even if rentals are reduced to 50%. With a per call revenue stream of around Rs 0.25, seven of the nine companies can become profitable (Annex XVI).

g) With a capacity utilization of 75% and 50% reduction in pager rentals, seven of the nine companies show profits. With a per call revenue of around Rs 0.25, eight of the nine companies show profit with ninth company showing a small loss (Annex XVII).

Ability to be contacted while moving from place to place adds value to the jobs of most of the skilled workers. Given an affordable cost and easy availability of PCOs, many individuals may also like to remain connected while on move. Availability of such a means also partially fulfills the requirement of a fixed line at one's home. Considering the example at d) above, availability of the pagers (both to acquire and to use) at a cheap rate and easy availability of access (e.g. PCOs) has potential to contribute quickly to a great extent in connecting the masses at an affordable cost without much of subsidy. With 50% reduction in rentals of pager, a numeric pager will be costing only around Rs 88/- per month.

In addition, there will be impact of further price reduction due to competition, on account of economy of scale, reduction in price of electronic goods with time, availability of better technologies, and capacity utilization beyond 75%. This will further augment the potential of the pager as a relatively cheaper and affordable means of remaining connected while on move.

The above are only indicative of some of the possible options. The underlying assumptions may have different bearings on different business plans. This analysis is given only to indicate that given the right environment, the radio-paging industry can also be made to contribute in the growth of Tele-communications in the country like India in a big way.

Keeping the above in view, the issues for consultation are,

- **What should be done to enable the paging industry to capture the mass market to increase the capacity utilisation? Who can be the other possible users?**
- **To what extent is the license fee the causal factor for the poor financial viability of the radio-paging operators?**

CHAPTER - 5

LICENSE RELATED ISSUES

Previous chapters provide details about Radio Paging Services particularly in Indian reference. This chapter provides for the kind of issues that should be kept in view while considering the issues related to licensing.

The service areas under consideration have been divided in to two types, one the areas with possibility of having open competition and two the areas under restricted competition. This is to facilitate proper perspective on any specific issue. This division has been done on the following basis:

Areas under open competition: The areas where there is no inherent restriction on the level of competition. These include areas where there are no existing licensees or where all the existing licensees have opted for migration to NTP 99 regime.

Areas under restricted competition: The areas where the level of competition is already set and is restricted. These relate to the areas where there is a vacant slot due to cancellation/surrender of a license etc.

5.1 Competition in the sector:

The status of radio paging Industry in India has been discussed in Chapter 2. With a small subscriber base, the industry is struggling for any reasonable revenue. New investments are extremely limited. The operators presently consider up-gradation as unviable in the existing set up. Several licenses have been cancelled or are in the process of being surrendered. Many licenses have not been implemented. All this causes bottlenecks in market making also.

Further, the rapid technological developments leading to convergence are making many services loosing their distinct nature and becoming a by-product of some other service(s). Radio Paging service is available to CMTS subscribers practically without any extra cost. Such developments are affecting and may further affect the viability of the Paging operations adversely in future.

It may also be examined if the existing availability of spectrum does or does not restrict the number of radio paging licenses. Further, if unlimited competition is

envisaged, then the spectrum allocations on first come first served basis may result in spectrum hoarding thereby creating monopolies or artificially restricting the competition in an undesired manner.

Also, DOT has intimated the decision (in the letter regarding migration of existing licensees) that new operators will bid for entry fee.

In view of these and the issues under reference, the issues for consultation include,

- What should be the basis for selection of new operators?
- How the technological developments will affect, in future, the competition in Radio Paging Industry?
- Does the existing spectrum availability pose any restrictions on the entry of new operators?
- What can be done to introduce open competition in such areas where it is as yet restricted?

5.2 Selection Criteria, & Entry Fee:

It is a matter for consideration whether it would be desirable to stipulate any entry fee for the purpose of keeping non serious players away. It is also worth considering whether such an entry fee is some kind of an assurance that the licensee has the financial ability to obtain financial closure of his business plan and would be in a position to initiate the roll out. It can be possibly argued that such stipulation helps in a situation of limited competition where a non-serious player can render intended competition (as envisaged by the policy of licensing) ineffective. This ultimately may result in a loss to consumers.

The new licenses can be provided in bunches or on a first come first served basis. First come first served basis can facilitate gradual entry of new operators over a period of time as and when they find a business case. The bidding process for entry fee however restricts the new licenses to be provided in bunches only.

In view of the above, the issues for consultation include,

- Is the bidding for entry fee for the new radio-paging operators a workable proposition in the present circumstances?
- If no, then what are the possible options? What should be the basis of fixation of the quantum of entry fee?
- Should the new licenses be provided in bunches or on first come first served basis?

- If the licensing for radio paging services is done on first come first served basis, what should be the eligibility conditions?
- What should be done to restrict hoarding of spectrum if license and spectrum allocations are done on first come first served basis?
- Will bidding for entry fee to select new licensees affect the level playing field with the existing operators in the same area? If so, what should be done to ensure the level playing field between the two?
- What should be the basis of fixing a base price for bidding for entry fee?

5.3 License Fee (revenue sharing) structure:

NTP-99 provided for revenue sharing as the means of charging the recurring license fee. It however did not specify the guidelines to ascertain its quantum. There are several ways in which this issue had been/can be considered. In case of limited competition, the license fee can also be used as a basis of selection of a new operator. It may also be argued that Radio Paging service can provide a cheaper means of remaining connected while on move to industrial/ Commercial workers, essentially required persons and low income individuals. Looking to the problem of affordability in India, such service can thus be considered to have a potential of fulfilling an essential role in national Telecom infrastructure. The cost increase in service resulting from license fee may manifest in an increased burden on the end user. The financial viability of the industry has also to be considered while considering the issue of quantum of license fee.

The issues for consultation that are related to license fee include,

- To what extent is the license fee a causal factor for the poor financial viability of the radio-paging operators?
- What should be the basis and quantum of license fee as a percentage of revenue sharing?
- Should the license fee as above be the same for all the areas? If no, what are the options?
- What should be the basis and quantum of license fee as a percentage of revenue sharing? What should be the correlation of such license fee with the license fee already being paid by the other existing RPSPs in same area?

- What should be done vis-à-vis license fee (revenue sharing) to ensure viability of operations while ensuring the level playing field between the new and the existing operators?

5.4 Revenue:

Annual license fee as a revenue sharing percentage is to be determined with reference to the Gross Revenue. The definition of the "Gross Revenue" for the purpose of calculating the license fee will have to be the same as in the case of other Telecom services where too the license fee is to be based on gross revenue. Normally the word gross indicates that it includes something that could have been subtracted. "Gross Revenue of the service provider would, therefore, consists of all revenues accruing to the licensee by way of operations of providing radio paging services as mandated under the license. All this may not constitute licensee's own income. It is only rational that service providers should not be forced to share revenues that they do not retain. License fee as a percentage of revenue sharing should, therefore be based on "Revenue" to be derived from gross revenue. Its definition should be simple and easily auditable to minimize manipulations. In this context it may also be kept in view that such definition of the revenue has to be in principle in line with the definition of the revenue for the same purpose in case of other services. TRAI has already given the recommendations for this purpose for several other services including GMPCS, CMTS and FSPs, which are available on its website www.trai.gov.in. TRAI has already provided such definition for Radio Paging services (for the case of city paging) as stated at Para 2.4 of this paper. Since there is nothing that has changed substantially, same definition is proposed to be used in the instant case also.

5.5 Flexibility of License:

The basic terms and conditions on which new radio paging licenses would be issued need to address the requirement of flexibility resulting from the dynamic nature of Telecom Technologies. In line with the emerging trend of convergence in the provision of Telecom services, it may be desirable to provide some flexibility in the terms of license so that the licensee is not unnecessarily constrained or finds himself legally barred when Technological changes force a change in his service provision as well. The issue for consultation is;

- Is it desirable to provide adequate flexibility in respect of the licensed radio paging services and thereby avoid foreclosure of future options of adopting or adapting to newer technologies?

CHAPTER - 6

ISSUES FOR CONSULTATION

In the light of the discussions in the preceding Chapters of this Paper, the following issues are posed for consultations before formulating TRAI's recommendations to DOT in the matter. The service areas under consideration have been divided in to two types, areas with a possibility of open competition and areas with restricted competition respectively in order to keep proper perspective on any specific issue. This division has been done on the following basis:

Areas with open competition: The areas where there is no inherent restriction on the level of competition. These include areas where there are no existing licensees or where all the existing licensees have opted for migration to NTP 99 regime.

Areas with restricted competition. The areas where the level of competition is already set and is restricted. These relate to the areas where there is a vacant slot due to cancellation/surrender of a license etc.

6.1 Level of Competition:

1. What should be the basis of selection for new operators?
2. How the technological developments will affect, in future, the competition in Radio Paging Industry?
3. Does the existing spectrum availability pose any restrictions on the entry of new operators?
4. What should be done to restrict hoarding of spectrum if license and spectrum allocations are done on first come first served basis?
5. What can be done to introduce open competition in areas where it is as yet restricted?

6.2 Selection Criteria, & Entry Fee:

6. Should the new licenses be provided in bunches or on first come first served basis?
7. If the licensing of radio paging services is done on first come first serve basis, what should be the eligibility conditions?
8. Is the bidding for entry fee for the new operators a workable proposition in the present circumstances?
9. If no, then what are the possible options? What should be the basis of fixation of the quantum of entry fee?
10. Will bidding for entry fee to select new licensees affect the level playing field with the existing operators in the same area? If so, what should be done to ensure the level playing field between the two?
11. What should be the basis of fixing a base price for bidding for entry fee?

6.3 Issues related to viability of Radio Paging Services:

12. What should be done to improve the financial viability of radio paging operations?
13. Will the charging for a call from PSTN to a pager at a higher rate per call and then sharing of the revenue collected by PSTN in an agreed ratio with the RPSPs be of help in the growth and in improving the financial viability of radio paging industry? If so what could be the basis of such sharing?

6.4 License Fee (revenue sharing) Structure:

14. What should be the basis and quantum of license fee as a percentage of revenue sharing? Should the license fee as above be the same for all the areas? If no, what are the options? What should be the correlation of such license fee with the license fee already being paid by the other existing RPSPs in same area?

15. What should be done vis-à-vis license fee (revenue sharing) to ensure viability of operations while ensuring the level playing field between the new and the existing operators?

16. To what extent is the license fee a causal factor for the poor financial viability of the radio-paging operators?

6.5 Miscellaneous:

17. Whether reduction in rental for paging services will significantly increase the customer base of the radio paging service providers?
18. Is it desirable to provide adequate flexibility in respect of the licensed radio paging services and thereby avoid foreclosure of future options of adopting or adapting to newer technologies?
19. Is there a need for any change in the present spectrum allocation and charging method being followed for radio-paging services?

Annexure - I

Government of India
Ministry of Communications
Department of Telecommunications
Sanchar Bhavan, 20-Ashoka Road, New Delhi-110001.

No.843-119/98-BS.III Dated: 19th May, 1999

To

The Secretary,
Telecom Regulatory Authority of India,
Jawahar Vyapar Bhavan,
Janpath, New Delhi.

Sub: Recommendations of TRAI on issue of fresh licences for Radio Paging Service Providers.

Dear Sir,

The New Telecom Policy 1999 (NTP-99) announced on 26.3.1999 envisages that the Radio Paging Service Providers (RPSP) shall be granted separate licence on non-exclusive basis for each service area of operation. Licences would be awarded for an initial period of 20 years and will be extended additional periods of 10 years thereafter. For this purpose, the service areas would be categorized as per the existing structure. The RPSPs shall be eligible to obtain licence for any number of service areas. The entry of more operators in a service area shall be based on the recommendation of the TRAI who would review this as required and not later than every two years. Also, the appropriate level of entry fee and percentage of revenue to be shared with the Licensor for different service areas of operation, definition of revenue for the purpose and the basis of selection of new operators, inter-alia are issues on which recommendations of TRAI are required in a time bound manner. Keeping in view the objectives of the New Telecom Policy, TRAI may also given its views on any other issue considered relevant.

2. As per the existing arrangement, Radio Paging licences are in existence in 27 cities and 19 circles (excluding 27 cities) in the country. There are 2 to 5 operators in the cities and 2 to 3 operators in the circles. Detailed list of cities and circles with number of slots and names of licensees are placed at Annex-A. In addition to the number of operators as above, DOT/MTNL entrusted with the

responsibility of universal service, reserves the right to operate Wide Area Radio Paging Service in any or all geographical areas mentioned above.

3. It is felt that all the financial and technical conditions proposed in the recommendations should be clearly measurable and enforceable.

4. It would be appreciated if TRAI can indicate the time by which these recommendations would be made available to the Government.

Yours faithfully,

Sd/-
(N. Parameswaran)
Dy. Director General (BS)

Annexure - II

No.843-119/98-BS.III/Pt.
Government of India
Ministry of Communications
Department of Telecommunications
Licensing Cell (BS Group)
Sanchar Bhavan, New Delhi-110001.

Dated: 20th Sept., 1999

To

The Secretary
Telecom Regulatory Authority of India,
Jawahar Vyapar Bhavan,
Janpath, New Delhi.

Sub: Recommendations of TRAI in regard to licence fee arrangement for migration of the existing Radio Paging Service Licensees (in whose case package is to be implemented) to NTP-99 Regime.

Sir,

I am directed to inform that pursuant to the announcement of New Telecom Policy 1999 and in view of the offer of migration to NTP-99 Regime given to City and Circle Radio Paging Service Licensees, the Government have now taken the following decisions:-

(i) Permit migration of existing licensees of Circle Radio Paging Service Licensees (for the Circles Andhra Pradesh, Gujarat, Maharashtra, Karnataka, Kerala, Tamilnadu, Himachal Pradesh, Punjab and Haryana) to NTP-99 regime as per offer of migration (copy enclosed). Under the Scheme of Migration, Govt. may issue additional licences in these circles in the vacant slots as also new licences as per the migration package in these Circles. The issue of more licences in a service area shall be based on the availability of spectrum and on the recommendations of TRAI who would review this as required and not later than every two years. For City Radio Paging Service, migration package is not being implemented as all licensees in none of the service area have accepted the package migration offer.

(ii) The bids for these vacant slots as also for new licences will be invited as per NTP-99 regime i.e. one time entry fee plus percentage share of revenue as licence fee. Decision on the percentage share of revenue will be taken on receipt of TRAI recommendations.

(iii) The cut of date for change over to NTP-99 regime for the existing circle paging service providers (in whose case the package is being implemented) will be 1.8.1999. Starting from this date, the percentage of gross revenue to be paid towards licence fee will be same as would apply in future to the new licensee(s) in the same service area. The licence fee dues payable upto 31.7.1999 would be treated as the Entry Fee for the existing operators. The new operators will bid for the Entry fee.

2. In the light of the above decision of the Government and keeping in view the earlier reference sent to TRAI vide letter No.843-119/98-BS.III dated 19.5.1999 (copy enclosed) regarding issue of fresh licences for Radio paging Service providers and also keeping in view the time frame of migration. TRAI may kindly provide their recommendations on urgent basis regarding licence fee arrangement (revenue share) as also the definition of revenue for this purpose for the existing Circle Radio Paging Service licensees (in whose case the migration package is to be implemented) to be made applicable to them on migration w.e.f. 1.8.1999 (the same percentage of revenue share will be made applicable to the new licensees of Circle Radio Paging Service).

3. I am therefore, directed to request the following:-

(a) Recommendation of TRAI as per para 2 above.
(b) The recommendations regarding the new operators for Radio Paging Service as sought vide letter No.843-119/98-BS.III dated 19.5.99 may be expedited.
(c) Other relevant recommendations in regard to City/Circle Radio Paging Service providers as sought under letter No.843-119/98-BS.III dated 19.5.99.

Thanking you,

Yours faithfully,

Sd/-
(Gurdip Singh)
Dy. Director General (BS)

Annexure of Annex.II

Copy

Government of India
Ministry of Communications
Department of Telecommunications
(BS Cell)
Sanchar Bhavan, 20-Ashoka Road,
New Delhi-110001.

No.843-26/99-BS.III(Pt.) Dated: 2nd September, 1999

Without Prejudice

To

All the existing Licensees of Radio
Paging Service

Sub: Proposed package for Migration of existing licensees of Radio Paging Service (Cities and Circles) to New Telecom Policy-1999 regime.

Ref.: Licence Agreement No. dated_____ for Radio Paging Service in_____ Service Area.

In accordance with Government approval, the following Package is proposed for migration of the existing Radio Paging Operations (Cities and Telecom Circles)to NTO-99 regime.

(i) The cut off date for change over to NTP-99 regime will be 1.8.1999.

(ii) The licensee will be required to pay one time Entry Fee and Licence Fee as a Percentage share of gross revenue under the licence. The Entry Fee chargeable will be the licence fee dues payment by existing licensees up to 3107.1999 claculated up to this date, as per the Conditions of existing licence.

(iii) The Licence fee as a percentage of gross revenue under the licence shall be payable w.e.f. 1.8.99. The Government will take a final decision about the quantum of the revenue share to be charged as licence fee after obtaining recommendations of the Telecom Regulatory Authority of India (TRAI). In the meanwhile, Government have decided to fix 15% of the gross revenue of the Licensee as provisional licence fee. The gross revenue for this purpose would be the total revenue of the Licensee company excluding service tax collected by the

licensee on behalf of the government from their subscribers. On receipt of TRAI's recommendation and Government's final decision, final adjustment of provisional dues will be effected depending upon the percentage of revenue share and the definition of revenue for this purpose as may be finally decided.

(iv) A total of at least 35% of outstanding dues including interest payable as on 31.7.1999 and LD Charges in full will have to be paid on or before 27.9.1999. The balance dues will have to be paid on or before 31.1.2000 along with interest calculated up to the actual date of payment.

(v) Even where the existing bank guarantees (FBG) have been encashed earlier, these will need to be kept alive/recouped simultaneously with the acceptance of this package. The value of the financial bank guarantee (s) will have to be further enhanced by 30.11.1999 so as to cover the outstanding amounts due including further sums which may become due.

(vi) If any of the Radio Paging operator in a givens service area does not accept the package, all the existing operators in that service area will continue in the existing licensing arrangement until the validity of the present licences.

(vii) Consequent upon migration to the NTP-99, the licensees will forego the right of operating in the regime of limited number of operators as per the existing licence agreement and would operate in a multipoly licensing regime i.e. additional licences without any limit may be issued in a given Service Area.

(viii) There shall be a lock in of the present share-holding for a period of five years counted from the date of licence agreement (effective date). Transfer of share holding directly or indirectly through subsidiary or holding companies shall not be permitted during this period. However, issue of additional equity share capital by the licensee companies / their holding companies by way of private placement / public issues shall be permitted. Further, the lock-in provisions shall not be applicable in case the shares are transferred pursuant to enforcement of pledge by the lending financial institutions/banks due to events of defaults committed by the borrowers with the condition that such shares should have been pledged by investment only in the particular licensed project.

(ix) The liquidated damages as per the existing licence agreement shall be paid latest by 27.9.1999.

(x) The period of licence shall be 20 years starting from the effective date of the existing licence.

2. Migration to the NTP-99 on the conditions mentioned above will be permitted on the premise that the aforesaid conditions are accepted as a package in its entirety and simultaneously all legal proceedings in Courts, Tribunals, Authority or in Arbitration instituted by the licensee and Associations of Radio Paging Service Operators (IPSA) against DoT or UoI shall be withdrawn. Further any dispute with regarding the licence agreement for the period upto 31.7.1999 shall not be raised at any future date. The acceptance of this package will be deemed as a full and final settlement of all existing disputes whatsoever irrespective of whether they are related with the present package or not.

3. After the terms and conditions of the package are accepted, amendments to the existing licence agreement will be signed between the licensor and the licensee.

4. The migration package offered is further subject to the orders, interim or final in CWP No.4510/99 in the case of Delhi Science Forum v/s Union of India and others presently pending before the High Court of Delhi at New Delhi.

5. An undertaking in the enclosed proforma by an authorized signatory of acceptance of the package by the licensee should reach DOT within weeks' time and in any case not later than 9.9.1999. In case no response is received within the stipulated period, it will be presumed that licensee does not propose to migrate to the new regime and the licensee will continue to operate under the terms and conditions of the existing licence.

Sd/-
(Shyam Babu)
Director (BS.III)

Encl: As above

Annexure - III

DETAILS REGARDING EXISTING CITY PAGING LICENSES

S.No.	Name of City	Licensee	License fee for first three years*	Total no. of subs as on 31.3.2000.
1.	Ahmedabad	Microwave Comm. Ltd.	217.80 lakhs	37051
		Hutchision Max. Ltd..	-do-	
		DSS Mobile	-d0-	
		RPG	-do-	
		Eider PWI Comm.	-d0-	
2.	Amritsar	ABC Comm.(I) Pvt. Ltd.	6.75 lakhs	3567
		Beltron	-do-	
		Punwire Paging Ltd.	72 lakhs	
3.	Bangalore	Page Point	240.0 lakhs	58726
		Telesistem	-do-	
		H. Max Ltd.	-do-	
		DSS Mobile	-do-	
		Eider PWI Comm.	-do-	
4.	Bhopal	Easy Call	65.51 Lakhs	2249
		Nice	115.20 Lakhs	
5.	Calcutta	Easy Call	423.00 Lakhs	27449
		Microwave	-do-	
		Modi Korea	-do-	
		DSS Mobile	-do-	
		Eider PWI Paging	-do-	
6.	Chandigarh	ABC Com.	58.0 Lakhs	10281
		Hutchision Max	-do-	
		Modi Korea	-do-	
		Eider PWI Comm.	-do-	
7.	Chennai	Telesistem	423.00 lakhs	72690
		RPG	-do-	
		Modi Korea	-do-	
		DSS Mobile	-do-	
		Eider PWI Com.	-do-	
8.	Coimbatore	Telesistem	15.00 Lakhs	4406
		Usha Martin	-do-	
9.	Delhi	Microwave	756.00 lakhs	101018

		ABC	-do-	
		RPG	-do-	
		DSS Mobile	-do-	
		Eider PWI Paging	-do-	
10.	Ernamulam	Telesistem	18.00 Lakhs	5390
		BPL	18.00 Lakhs	
		Eider PWI Com.	-do-	
11.	Hyderabad	Easy Call	188.00 Lakhs	50024
		H. Max	-do-	
		DSS Mobile	-do-	
		Page Point	-do-	
12.	Indore	Easy Call	58.00 Lakhs	5567
		Modi Korea	-do-	
13.	Jaipur	ABC Com.	99.00 Lakhs	10087
		Modi Korea	-do-	
		Usha Martin	-do-	
		Eider PWI Com.	-do-	
14.	Kanpur	ABC Com.	99.00 Lakhs	4646
		Modi Korea	-do-	
		DSS Mobile	-do-	
15.	Lucknow	Modi Korea	99.00 lakhs	5235
		DSS Mobile	-do-	
16.	Ludhiana	ABC Com.	20.58 Lakhs	10867
		H. Max.	-do-	
		Beltron	-do-	
17.	Madurai	Telesistem	9.00 Lakhs	1848
		Usha Martin	-do-	
18.	Mumbai	Page Point	1050.00	164356
		Matrix	-do-	
		Microwave	-do-	
		DSS Mobile	-do-	
		Eider PWI Paging	-do-	
19.	Nagpur	Easy Call	65.51 Lakhs	6352
		Beltron	-do-	
		NICE	155.10 Lakhs	
20.	Patna	Easy Call	15.00 Lakhs	1521
		Beltron	-do-	
21.	Pune	Matrix	76.00 Lakhs	33596
		H. Max	-do-	
		DSS Mobile	-do-	
		Page Point	-do-	
		Eider PWI Com.	-do-	
22.	Rajkot	Matrix	36.30 Lakhs	6733
		Microwave	-do-	

		Usha	-do-	
23.	Surat	Microwave	108.40 Lakhs	12050
		Beltron	-do-	
		Matrix	-do-	
24.	Trivandrum	Telesistem	18.00 Lakhs	2702
		BPL	-do-	
25.	Vadodara	Microwave	65.51 lakhs	12497
		H. Max	-do-	
		Matrix	-do-	
		Eider PWI com.	-d0-	
26.	Varanasi	ABC Com.	58.00 Lakhs	1604
		Modi	-do-	
		Beltron	-do-	
27.	Visakhapatnam	Easy Call	9.72 Lakhs	3690
		Usha Martin	-do-	

Total subs in the cities = 660510

- The mode of payment of the first three years licence fee is as follows:

First year: One sixth of the three years paging levy
Second year: One third of the three years paging levy
Third year: One half of the three years paging levy

The fourth and fifth year's License fee has been fixed as 5% of the gross revenue.

Annexure - IV

DETAILS REGARDING EXISTING CIRCLE PAGING LICENSES

S.No	Name of the circle	Category @	Licensee	License fee for ten years* (Rs. in Lakhs)	Total no. of subscriber as on 31.3.2000
1	Andman & Nicobar		-	-	-
2	Andhra Pradesh		Punwire Mobile	4400.00	2532
3	Assam		NICE	116.00	1057
4	Bihar		-	-	-
5	Gujrat		Punwire Mobile	5050.00	2721
6	Haryana		Punwire Mobile	4100.00	2654
7	Himachal Pradesh		Punwire Mobile	351.00	1117
8	Jammu & Kashmir		NICE	50.00	1937
9	Karnataka		BPL Wireless	4551.00	12329
			Punwire Mobile	4551.00	
10	Kerala		BPL Wireless	2500.00	7057
			Punwire Mobile	2500.00	
11	Madhya Pradesh		Punwire Mobile	1102.00	4012
12	Maharashtra		Punwire Mobile	6650.00	9210
13	North East		-	-	-
14	Orissa		-	-	-
15	Punjab		Punwire Mobile	3120.00	3240
16	Rajasthan		Punwire Mobile	2601.00	3490
17	Tamil Nadu		BPL Wireless	3652.00	19506

			Punwire Mobile	3652.00	
18	Uttar Pradesh		Punwire Mobile	4350.00	2290
19	West Bengal		-	-	-

Total No. of subscriber in 19 circles = 73152

* The licence fee for ten years is payable annually in the ratio as shown below:-

1:1:1:1:1:1.2:1.2:1.2:1.2:1.2

@ No category was fixed for Radio Paging Services Licences.