

CHAPTER I

Performance Audit of Cellular Mobile Telephone Services in Bharat Sanchar Nigam Limited

HIGHLIGHTS

- **The Tenth Five Year Plan target for providing CMTS connections to the customers by the Bharat Sanchar Nigam Limited (BSNL) was 224 lakh. Against this target, BSNL fixed annual targets aggregating 329 lakh for the period 2002-06, but the overall cumulative achievement against these targets during this period was only 52 per cent.**

(Paragraph 1.12.2)
- **CMTS systems for 297 lakh lines at a cost of Rs 10,759 crore were procured under phases-I to IV⁺⁺ of the 'India Mobile Personal Communication Services' (IMPCS) project. BSNL installed systems having equipped capacity of 194 lakh lines upto March 2006 and the capacity utilisation as of March 2006 was 89 per cent.**

(Paragraphs 1.8 and 1.12.1)
- **BSNL Board initially approved (January 2005) a major expansion of CMTS by 641 lakh lines under phase-V of the IMPCS project. The process of selection of suppliers had still not been completed as of September 2006 though the project was to be completed by December 2007.**

(Paragraph 1.9.3)
- **Since the commencement of CMTS, a total of 72 lakh connections had been closed due to surrender by the customers or disconnections by BSNL due to non-payment of dues by the customers. 20 lakh connections were closed in just four months.**

(Paragraph 1.12.3)
- **As of March 2006, BSNL's share in the country's total CMTS customer base of 692 lakh customers was only 25 per cent.**

(Paragraph 1.9)
- **The quality of CMTS remained unsatisfactory due to poor network coverage, system failures, low signals or no signals, call dropping, not attending to the customers' complaints, etc. Besides, BSNL was unable to meet various quality service benchmarks prescribed by the Telecom Regulatory Authority of India (TRAI).**

(Paragraph 1.12.8)

- **In 18 circles, 12,632 CMTS sites had been radiated during phases-I to IV of the IMPCS project without obtaining mandatory clearance from the Standing Advisory Committee on Frequency Allocations.**

(Paragraph 1.10.1)

- **Delays of up to 20 months in nine circles and one telephone district in handing over of 3,070 sites to the vendors for installation and commissioning for CMTS system equipment led to further delays in commissioning of these equipment.**

(Paragraph 1.10.3)

- **Unjustified expansion of the capacity of the Intelligent Network system in the East Zone by five lakh lines resulted in avoidable expenditure of Rs three crore.**

(Paragraph 1.11.1)

- **BSNL extended undue benefits to the suppliers by not obtaining prescribed additional performance bank guarantees of Rs 28 crore from them for allowing extensions ranging from three weeks to 55 weeks in the time schedule of commissioning of CMTS systems in five circles.**

(Paragraph 1.11.2)

- **Delays ranging from three weeks to more than two years in commissioning of CMTS systems under phases-I to IV of the IMPCS project in 12 circles were noticed. However liquidated damages amounting to Rs 274 crore were not recovered by BSNL from the concerned suppliers.**

(Paragraph 1.11.3)

- **Three circles failed to recover the excess amount of Rs 30 crore paid to the suppliers during phase-II⁺ of the IMPCS project despite instructions from the corporate office.**

(Paragraph 1.11.4)

- **BSNL suffered a loss of potential revenue of Rs 275 crore due to non-availability of recharge coupons /Top Up cards in Uttar Pradesh (West) Circle and delay in expansion of network in the West Zone.**

(Paragraph 1.11.8 & 1.11.9)

- **10 circles and one Telephone District delayed the execution of annual maintenance contracts (AMCs) with vendors by 67 days to 481 days and paid Rs 18 crore to vendors without availing of AMC facility.**

(Paragraph 1.12.4.1)

- **BSNL failed to recover/levy penalty of Rs 28 crore from vendors for delays in rectification of faults during warranty and AMC periods.**

(Paragraph 1.12.4.2 and 1.12.4.3)

- **Poor performance of Interactive Voice Response System equipped call centers led to termination of 24 to 40 per cent of customers' calls without being answered during 2004-07 leading to customer dissatisfaction.**

(Paragraph 1.12.6)

- **BSNL suffered a loss of Rs six crore due to fraud committed by the customers booked through franchisees.**

(Paragraph 1.12.5)

- **Delayed implementation of threshold server for monitoring the credit limits, issue of connections without verifying the particulars of customers and failure to activate the automatic disconnection facility in the billing system led to loss of revenue of Rs 57 crore.**

(Paragraph 1.13.2)

- **Recharge coupons and top-up cards valuing Rs 16 crore remained unreconciled with the cash receipt against them.**

(Paragraph 1.13.4)

RECOMMENDATIONS:

It is necessary for BSNL to:

- **ensure timely finalisation of the entire procurement process to avoid the risk of delays in procurement, installation and commissioning of the CMTS equipment and the loss of customer base.**
- **prescribe in advance the time schedules for the various activities to be undertaken by circles for the creation of necessary infrastructure and for the handing over of sites to the vendors for installation and commissioning of CMTS equipment.**
- **prepare appropriate strategies for ensuring optimum utilisation of the equipped capacity of its CMTS systems and achievement of operational targets for the release of connections.**

- **monitor the performance of the suppliers in carrying out their responsibility towards providing adequate and uninterrupted network coverage during warranty and AMCs.**
- **monitor the performance of the customer care centres and ensure adherence to the quality of service norms fixed by TRAI to avoid the risk of migration of the customers to other operators.**
- **ensure effective monitoring of collection of outstanding revenue and timely billing of the customers to avoid the risk of revenue arrears becoming unrecoverable.**

1.1 INTRODUCTION

The major objective before Bharat Sanchar Nigam Limited (BSNL) on its formation in September 2000 was fulfillment of its Universal Service Obligations under the National Telecom Policy (NTP)-1999. The Tenth Plan (2002-07) policies and programmes were also guided by the basic goal of creating a world-class telecom infrastructure in order to meet the requirements of Information Technology (IT) sector and the needs of a modernizing economy. The Cellular Mobile Telephone Services (CMTS) were expected to be the cornerstone of the public sector expansion plans in the Tenth Plan and BSNL was expected to be a major national player in these services.

On the basis of a pilot project undertaken (December 1999) through C-DOT by the Department of Telecommunications (DoT), BSNL commenced CMTS on an experimental basis in Bihar and Jharkhand circles from January 2001, in the Calcutta Telephones District from November 2001 and in the Tamil Nadu Circle from July 2002. A countrywide large-scale rollout of post-paid CMTS under the brand name 'CellOne' and pre-paid CMTS under the brand name 'Excel' on commercial basis was done by BSNL in October 2002 (except in the Assam, J&K and North East circles). Lucknow city, under the Uttar Pradesh (East) Circle, was the first to rollout post-paid (CellOne) CMTS in October 2002. CMTS was launched in the J&K Circle in August 2003, in the North East Circle in November 2003 and in the Assam Circle in February 2004.

BSNL is presently using 2.5 G (Global System for Mobile with General Packet Radio Service) technology and has been allotted 6.2 Mega Hertz (Mhz) and 8 Mhz spectrum in different circles.

For billing revenue from CMTS, BSNL had established five Billing and Customer Care Centres (B&CCS) at Chandigarh, Kolkata, Pune, Hyderabad and Trichy.

The position of revenue, expenditure, operating profit and average revenue per unit (ARPU)^{*} pertaining to CMTS of BSNL during the four years upto 2005-06 was as under:

Year	Number of customers	Revenue	Expenditure	Operating profit (3 - 4)	ARPU (3/2)
	(in crore)	(Rupees in crore)			(in Rupees)
(1)	(2)	(3)	(4)	(5)	(6)
2002-03	0.23	403	252	151	1,752
2003-04	0.53	2,133	1,010	1,123	4,025
2004-05	0.94	3,954	1,694	2,260	4,206
2005-06	1.72	6,525	2,644	3,881	3,794

ARPU had suddenly decreased during the year 2005-06 compared to previous year despite substantial increase in the number of customers which was mainly on account of decrease in CMTS tariffs under different schemes.

1.2 ORGANISATIONAL SETUP

The overall control over CMTS operations rests with the Chairman and Managing Director (CMD). At the corporate level, the CMD is assisted by the Director (Commercial & Marketing), Sr. Deputy Director General (CMTS-Operation & Maintenance), Deputy Director General (CMTS) and five Joint Deputy Directors General. At the circle level, the Chief General Managers/General Managers and Deputy General Managers assist the CMD.

1.3 SCOPE OF AUDIT

Performance audit of CMTS in BSNL covered various activities relating to their planning; procurement, delivery, installation, acceptance testing and commissioning; utilisation and operational performance; billing, collection and accounting of revenue; customer care and quality of services provided to the subscribers pertaining to the period from 2001-02 to 2005-06. The relevant records maintained at the corporate office and 22 telecom circles[‡] as well as the two Metro Districts located at Kolkata and Chennai were reviewed.

1.4 AUDIT OBJECTIVES

The main audit objectives were to assess if:

- BSNL had adequately planned for initial launching and subsequent expansion of Cellular Mobile Telephone Services;

^{*} Average revenue earned per customer

[‡] Out of 24 circles, the records of two circles namely, the Andaman & Nicobar and North East-II circles were not reviewed

- BSNL created the required infrastructure before installation of CMTS equipment;
- BSNL procured CMTS equipment in an economical and efficient manner;
- the delivery, installation and commissioning of CMTS equipment were efficient and economical;
- BSNL optimally utilized the equipped capacity of CMTS;
- the operational performance of CMTS was effective and remunerative;
- the quality of services provided to the customers was satisfactory; and
- the system of billing, collection and accounting of revenue from CMTS was economical, efficient and effective.

1.5 AUDIT CRITERIA

The main criteria used for audit were as follows:

- Codal provisions for assessment of requirements, provision of infrastructure and selection of technology.
- Codal provisions for tendering and procurement.
- Terms and conditions of purchase orders.
- Operational and financial performance indicators fixed by DoT and the Company.
- Performance indicators fixed by the Telecom Regulatory Authority of India in respect of quality of service.

1.6 AUDIT METHODOLOGY

The audit methodology involved examination of documents and discussions with the auditee to evaluate the performance of the CMTS on the basis of the audit criteria broadly outlined earlier.

1.7 ACKNOWLEDGEMENT

For conducting the Performance Audit, the audit teams visited the corporate office, all circles (except the Andaman & Nicobar and North East-II circles) and two telephone districts of BSNL including the SSAs falling under various Circles. In the course of audit a number of issues were deliberated, besides examination of records and documents. Entry and exit conferences were also held at Circle level and with Corporate Management. Audit acknowledges the cooperation and assistance extended by all levels of the auditee organisation at various stages for completion of the Performance Audit.

1.8 AUDIT FINDINGS

In December 1999, DoT entrusted* to C-DOT the work of the CMTS pilot project to be undertaken on a turnkey basis at a cost of Rs 43.80 crore in the Bihar and Andhra Pradesh circles and two Telephone Districts at Chennai and Kolkata. The erstwhile Department of Telecom Services (DTS) of DoT was given a licence in February 2000 for operation of CMTS in the country (except Assam, J&K and North East circles and Delhi and Mumbai cities#) for 20 years. Government permitted BSNL to launch CMTS in the Assam, J&K and North East circles in August 2002.

Based on the pilot project, the Telecom Commission decided in August 2000 to widen the scope of CMTS to 15 lakh connections. After incorporation of BSNL in September 2000 and transfer of the service providing functions of DTS and DTO of DoT to it in October 2000, BSNL ventured (November 2000) upon its major GSM based CMTS under “India Mobile Personal Communication Services” (IMPCS) project. The scope of the first tender was enhanced to 40 lakh lines of CMTS, of which 15 lakh lines were to be procured in phase-I and 25 lakh lines in phase-II. The roll out of this capacity in the country was to be completed in a period of two years. Thereafter, BSNL procured additional CMTS lines to enhance its CMTS capacity throughout the country under the subsequent phases-III and IV⁺⁺ of its IMPCS project and further ventured on tendering for CMTS equipment for phase-V of this project in March 2006.

Audit observed that of the total of 297.46 lakh lines of CMTS systems valued at Rs 10,758.63 crore ordered for procurement during 2001-02 to 2005-06 under phase-I to phase-IV⁺⁺ of IMPCS project, systems having installed capacity of 193.53 lakh lines only had been commissioned upto March 2006. The actual capacity utilisation of these equipment upto March 2006 was 88.69 *per cent* (i.e. 171.64 lakh lines). Though it was expected that BSNL would provide around 223.84 lakh connections of CMTS during the Tenth Plan period (2002-03 to 2006-07), only 171.64 lakh connections were provided by BSNL upto March 2006.

Besides, under phase-V of IMPCS project, BSNL had planned to procure 635 lakh lines of CMTS at an estimated cost of Rs 21,590 crore (i.e. Rs 3,400 per line). Out of 635 lakh lines, a mega tender for 455 lakh lines issued in March 2006 to registered Indian companies was still (September 2006) under finalisation

* The CMTS pilot project was to be undertaken by the Center for Development of Telematics (C-DOT). The essential components of the project like Mobile Services Switching Centre, Home Location Register, Visitor Location Register, Equipment Identity Register, Authentication Centre, Short Message Service and Voice Mail Service were to be supplied as per the developments carried out by C-DOT. The Base Station System was to be procured through an open tender by C-DOT.

CMTS licence for Mumbai and Delhi cities was with the Mahanagar Telephone Nigam Limited (MTNL).

and the remaining 180 lakh lines had been planned to be procured from ITI Limited (under the quota reserved for it) at the rate to be finalised for procurement of 455 lakh lines under the aforementioned tender.

Audit noticed certain points relating to planning, creation of infrastructure, procurement, capacity utilisation, operational performance, billing and collection of revenue and quality of the CMTS provided by BSNL which needed to be addressed urgently, especially in the light of competition from private operators. These are discussed in the succeeding paragraphs.

1.9 PLANNING

CMTS business is highly competitive as a number of private operators, such as Bharti Cellular, Hutchison Essar, Idea Cellular, BPL Mobile, RPG Cellular, Spice Communications, Fascal, Escotel Mobile, Aircel Digilink, Reliance Telecom and Bharti Hexacom were also providing CMTS in most of the areas where BSNL was operating. Out of the 691.98 lakh CMTS customer base in the country as of March 2006, BSNL's share was 171.64 lakh (24.80 *per cent*).

The year-wise total customer base of CMTS in the country vis-à-vis BSNL's share therein as at the end of each of the last four years upto 2005-06 was as under:

As at the end of	Country's total CMTS customer base* (in lakh)	BSNL's CMTS customer base (in lakh)	BSNL's percentage share in country's CMTS customer base
March 2003	127	23	18
March 2004	262	53	20
March 2005	410	94	23
March 2006	692	172	25

It was thus imperative on the part of BSNL to expeditiously increase its CMTS capacity based on a proper assessment of demand to meet the competition. This was especially so when precious time had been lost in procuring CMTS through the pilot project assigned to C-DOT while GSM technology for commercial use was already available and being used by other operators in the country. Audit observed delays in enhancement of CMTS capacity by BSNL, as discussed below.

1.9.1 Delay in initial launch of CMTS

DTS of DoT was issued the licence in February 2000 for operation of CMTS in the country. CMTS was launched by BSNL throughout the country on commercial basis only in October 2002 i.e. after a lapse of more than two and half years from the date of issue of the licence. Significant time was taken in drawing up specifications, formulating tender documents and in evaluating tenders. Other private operators, who were granted licences for CMTS in 1994-1995, had started

* Including customer base of MTNL

CMTS in their service areas within one year from the effective dates of their licence agreements despite the fact that CMTS technology being introduced by them at that time was new for India. The delay on the part of DTS/BSNL in launching of CMTS meant the loss of a certain share of the customer base that would have been secured during that period.

1.9.2 Delay in placement of purchase orders

- Audit noticed that the Assam Circle on getting the permission for launching CMTS in August 2002 under phase-I of the IMPCS project, immediately took up (August 2002) the matter with the corporate office and the Bihar Circle (nodal office) for placing advance purchase order on the already selected vendor (Ericsson) for the East Zone. Advance purchase order was to be issued by the Bihar Circle within 96 days, as per the Company's procurement policy. But the corporate office and the Bihar Circle took almost one year in sorting out this matter and the Bihar Circle finally issued the advance purchase order on Ericsson for supply and commissioning of 42,550 lines of CMTS in Assam Circle only in August 2003 resulting in delay of eight months.
- As per BSNL's Procurement Manual, purchase order should be placed on the selected vendor within 19 days from the date of issue of advance purchase order. Audit noticed that after the issue of the advance purchase orders there were delays from 126 days to 462 days in placing purchase orders in the Rajasthan Circle for procurement of CMTS equipment under phases-I, II, IV⁺ and IV⁺⁺ from Nokia and 114 days under phase IV⁺⁺ from Ericsson. The SDE (NP) CMTS, Rajasthan Telecom Circle stated that due to delays in assessment of the infrastructure requirement and transfer of the senior officers of the Circle the purchase orders were delayed.

1.9.3 Delay in finalization of tender for phase-V of IMPCS project

In November 2004, the Minister for Communications & IT outlined the vision statement that the country's overall telecom network (landlines, WLL and CMTS) capacity would be taken to 2500 lakh lines by December 2007 in which BSNL and MTNL were expected to have 50 *per cent* share. To achieve this target, the BSNL Board approved (January 2005) procurement of 641.30 lakh lines of CMTS under phase-V of the IMPCS project. Audit scrutiny of the records revealed that there were delays at every stage of finalisation of the tender and purchase orders were yet to be placed with the vendors.

- A committee constituted (January 2005) to formulate the expansion strategy reassessed the proposed procurement and recommended (June 2005) tendering for procurement of 400 lakh lines of CMTS with a quantity variation of upto 50 *per cent*.

- In order to give impetus to the Government's proposed policy for indigenous manufacture of telecom equipment, the Board revised (July 2005) its procurement policy to procure telecom equipment under any tender in two phases. In the first phase, vendors would supply 50 *per cent* of the total tendered equipment. In the second phase, the remaining equipment should have 20 *per cent* indigenous value addition.
- The Minister directed (August 2005) BSNL to tender for 600 lakh lines of CMTS with a quantity variation of upto 50 *per cent*. In the first phase, vendors should supply 33 *per cent* (instead of 50 *per cent*) of the tendered equipment and the remaining tendered equipment in the second phase must have 30 *per cent* (instead of 20 *per cent*) indigenous value addition.
- BSNL Board approved (November 2005) issue of open tender at the national level for three zones i.e. North, East and South for procurement of 450 lakh lines and reserved the balance of 150 lakh lines of CMTS equipment for West zone for ITI.
- The Government nominee Director suggested (December 2005/January 2006) reconsideration of the modalities of issuing the above tender and the Board constituted (January 2006) a committee of experts to vet the tender document.
- Based on the recommendations (March 2006) of the committee of experts, the Board approved (March 2006) the tender for inviting bids for procurement of 455 lakh lines of CMTS for three zones i.e. North, East and South from registered Indian companies and 180 lakh lines for the West zone were reserved for ITI. The eligibility criteria fixed for the bidders required that they should already have manufacturing facilities in India for the core equipment to be supplied or they themselves or their parent companies should create the infrastructure within six months from the date of issue of the purchase order for the first phase.
- The tender was opened in June 2006 and the process of selection of bidders for placement of purchase orders had not been completed as of September 2006.

Audit observed that although BSNL had a standardized procurement policy and had adequate experience in procurement of GSM equipment since 2001, there were inordinate delays in finalisation of the tender during 2005-06 as brought out above. Audit further noticed (October 2006) that between January 2005 and October 2006, the total addition of subscribers in GSM by private operators was 381.68 lakh subscribers (excluding Delhi and Mumbai where BSNL does not operate) and BSNL lost this opportunity due to delays in the tendering process.

RECOMMENDATIONS

- **BSNL should ensure timely finalisation of the entire procurement process to avoid the risk of delays in procurement, installation and commissioning of the CMTS equipment and loss of customer base.**

1.10 INFRASTRUCTURE

With a view to avoiding delay in commissioning of the CMTS systems, the corporate office issued (February 2001) instructions to the circles to keep the infrastructure ready in advance and reiterated these instructions from time to time. It was noticed that these instructions were not fully complied with by the circles. The corporate office on its part did not fix any time schedule for provision of infrastructure and failed to monitor the progress of work done by the circles in their areas. Consequently, there were inordinate delays in installation and commissioning of CMTS systems at many places.

1.10.1 Absence of SACFA[↓] clearance for sites

Telecom operators have to seek clearance for the sites where they intend to install wireless equipment from SACFA, which give site clearance within a period of six months from the date of receipt of the applications. The Corporate office, while prescribing the procedure to be followed, directed (February 2001) all circles to take immediate steps for obtaining clearance for sites from SACFA for installation of CMTS wireless equipment. Further, as per terms and conditions of the bid documents issued for procurement of CMTS equipment, selected vendors were to do all the activities relating to obtaining of SACFA clearance for the sites for which no separate charges were payable to them.

A test check of records of 18 circles^{*} revealed that a total of 12,632 CMTS sites were radiated during phases-I to IV of the IMPCS project without obtaining SACFA clearance as detailed in Appendix-I. Of these sites, 9,116 sites were those for which SACFA clearance had been sought for but was not received and 3,516 sites were those for which SACFA clearance had not at all been sought for by six circles[‡].

[↓] SACFA: The Standing Advisory Committee on Frequency Allocations is the apex body in the WPC wing of DoT, consisting of members drawn from DoT and user departments such as All India Radio, Doordarshan, Defence, Railways, Civil Aviation, BSNL, etc for considering matters regarding coordination for frequency allocations and other related issues and for issue of clearance of sites for fixed stations and their antenna masts.

^{*} Andhra Pradesh, Assam, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, J&K, Karnataka, Kerala, Madhya Pradesh, Maharashtra, North East-I, Orissa, Punjab, Rajasthan, Uttaranchal, UP (East) and UP (West).

[‡] Chhattisgarh, Kerala, Maharashtra, Orissa, Rajasthan and UP (West)

1.10.2 Non-provision of sites, towers and power supply in time

Sites, towers and power supply were not provided in time in a number of cases which led to delay in installation and commissioning of Base Transceiver Stations (BTSs)[£] in some of the circles as discussed below:

- Delays of two to 10 months in completion of civil works and other infrastructure for installation of 70 BTSs in Uttar Pradesh (East) Circle, led to delay of around 12 months in commissioning of CMTS under phase-I of the IMPCS project in this Circle.
- Delays of two to 13 months in acquisition of 129 sites in five SSAs (Meerut, Moradabad, Agra, Rampur and Etawah) of the Uttar Pradesh (West) Circle, led to further delays in commissioning of CMTS in these SSAs under phase-IV of the IMPCS project.
- Delays of six to 14 months in making adequate arrangements for power supply, led to delays in installation and commissioning of 89 BTSs under phases-IV, IV⁺ and IV⁺⁺ of the IMPCS project in the Himachal Pradesh Circle (8 BTSs), Punjab Circle (2 BTSs) Uttaranchal Circle (41 BTSs) and Uttar Pradesh (West) Circle (38 BTS).
- Delays of two to 12 months in completion of 15 tower foundations and delays of one to 24 months in erection of 35 towers, led to further delays in commissioning of CMTS equipments under phases-III, III⁺ and IV of the IMPCS project in the Rajasthan Circle.

1.10.3 Delays in handing over of sites to the vendors

As per special conditions of the tender documents and the purchase orders placed for procurement of CMTS equipment, it was obligatory on the part of the concerned circles to hand over the sites to the vendors within six weeks of the date of issue of purchase orders so as to ensure commissioning of the equipment within the prescribed period.

A test check of records of nine circles^{*} and Calcutta Telephones District showed that during phases-I to IV⁺⁺ of the IMPCS project, handing over of 3,070 CMTS sites to the vendors was delayed by one month to 20 months by these units as detailed in Appendix-II. This further delayed commissioning of CMTS equipment by the vendors, which resulted in potential loss of revenue to BSNL. The local management of these Circles/District attributed delays in handing over of sites to delayed acquisition of sites, radio frequency surveys, etc.

[£] BTS is a fixed tower and it functions as a radio repeater as well as a mobile interface and communicates with mobile stations (i.e. mobile handsets with the customers)

^{*} Bihar, Himachal Pradesh, J&K, Jharkhand, Kerala, Madhya Pradesh, Orissa, Punjab and Rajasthan

1.10.4 Installation of BTSs on selected sites without obtaining permission from local authorities

Telecom operators have to seek prior permission from local authorities for installation of BTSs on the selected sites. For granting this permission, local authorities also levy permission charges on the telecom operators. A review of the relevant records in various circles revealed the following irregularities:

- Bhubaneswar Municipal Corporation raised a claim on the Orissa Circle in August 2005 to pay license fee at the rate of Rs 10000 per tower. They also objected that the Orissa Circle had not intimated to the local authority about the details of towers erected at various sites under their jurisdiction. Berhampur Development Authority (BDA) issued notice in July 2005 that the Orissa Circle had installed high rise towers within BDA jurisdiction without obtaining mandatory permission for utilization of towers as required under Orissa Development Act 1982. However, the Orissa Circle had made no payment to these local authorities as of July 2006.
- For installation of 72 BTS sites pertaining to phases-I to III of IMPCS project, prior permission from the Kolkata Municipal Corporation was not obtained by the Calcutta Telephones District. The Kolkata Municipal Corporation issued (May 2006) instructions that the sites where the Calcutta Telephones District had already completed construction would be regularized on depositing of five times of the existing permission charges of Rupees one lakh per site. Hence, Calcutta Telephones District had become liable to pay an additional amount of permission charges of Rs 2.88 crore for these 72 sites, which could have been avoided had the District taken timely action for obtaining prior permission from the Kolkata Municipal Corporation for these sites.

RECOMMENDATIONS:

BSNL should:

- **prescribe in advance the time schedule for the various activities to be undertaken by the circles for creation of infrastructure and handing over the sites to the vendors for installation and commissioning of CMTS equipment.**
- **devise a monitoring mechanism for ensuring timely receipt of clearances for sites from SACFA and obtaining of prior permission from the local authorities for installation of CMTS equipment.**

1.11 PROCUREMENT

For finalisation and issue of tenders and placement of purchase orders for procurement of CMTS equipment under the IMPCS project, BSNL divided its

circles into four zones, viz., North, South, East and West and appointed Haryana Circle as the nodal office for the North Zone, Kerala Circle for the South Zone, Bihar Circle for the East Zone and Maharashtra Circle for the West Zone for carrying out these activities.

As mentioned in the earlier paragraph 8, a total of 297.46 lakh lines of CMTS systems valued at Rs 10758.63 crore was procured by BSNL during 2001-02 to 2005-06 under phases-I to IV⁺⁺ of the IMPCS project and further procurement of 635 lakh lines of the systems under phase-V of the project was under finalisation as of September 2006 as detailed below:

Phase	CMTS System ordered for procurement (in lakh lines)	Total value (Rs in crore)	Present status
Phase I & II	40.13	2421.86	Commissioned
Phase II+	7.76	236.81	Commissioned
Phase III	20.88	995.00	Commissioned
Phase III+	10.68	445.00	Commissioned
Phase IV	152.01	4927.44	Under commissioning
Phase IV+	20.00	288.10	Commissioned
Phase IV ⁺⁺	46.00	1444.42	Under Commissioning in North Zone and under ordering in West Zone
Total (Phase I to IV)	297.46	10758.63	
Phase V	635 lakh lines to be procured	21590 (Estimated cost)	Tender for 455 lakh had been issued in March 2006, which was under finalization as of September 2006. Balance of 180 lakh lines reserved for procurement from ITI under the quota reserved for this PSU.

Besides, 361 lakh SIM cards valued at Rs 234.02 crore were also procured from different suppliers during March 2004 to October 2005.

Audit noticed various deficiencies in procurement of CMTS systems and SIM cards, which are discussed in the succeeding paragraphs.

1.11.1 Avoidable expenditure of Rs 3.32 crore on expansion of Intelligent Network in East Zone

In order to avoid congestion in the network, the corporate office authorised expansion of existing CMTS network by 6.23 lakh lines under phase-IV⁺ in the East Zone without expansion of the existing Intelligent Network (IN) system meant for the pre-paid connections. Accordingly, all circles under East Zone placed purchase orders valued at Rs 90.92 crore against the overall sanctioned amount of Rs 97.16 crore, leaving unutilised an amount of Rs 6.24 crore. In order to utilise this amount, the West Bengal Circle proposed (May 2005) to the

corporate office that the existing IN system in the East Zone be expanded by five to 10 lakh lines. The corporate office approved (July 2005) the expansion of the IN system by five lakh lines for which purchase order was placed on Ericsson in August 2005 by the West Bengal Circle for a total value of Rs 3.32 crore.

Audit noticed that while finalising the above procurement of five lakh lines for the expansion of the IN system, neither the West Bengal Circle nor the corporate office considered the purchase order already placed on Nortel in September 2004 (under phase-IV) for 20 lakh line IN system for East Zone, the supplies against which had not been received. When Nortel failed to supply 20 lakh lines IN system, the corporate office authorized (September 2005) the West Bengal Circle to place another purchase order on Ericsson for the above IN system of 20 lakh lines, which the West Bengal Circle did and the supplies were received (November 2005 to January 2006).

However, at this time also both the West Bengal Circle and the corporate office did not realize that with both the purchase orders (for five lakh lines in August 2005 and 20 lakh lines in September 2005) placed on Ericsson, the total capacity of the IN system in the East Zone would increase to 45 lakh lines for pre-paid connections for which there was no demand.

Audit noticed that the expansion in the IN system in the East Zone had augmented the existing IN capacity of 20 lakh lines to 45 lakh lines, whereas at the end of May 2006, the total pre-paid customer base of the East Zone was only 26.60 lakh. The Management could have either withdrawn the purchase order for five lakh lines placed on Ericsson in August 2005 or at least amended the purchase order of 20 lakh lines placed on Ericsson in September 2005 to 15 lakh lines to avoid unnecessary capacity expansion.

The failure to take timely corrective action by the Management resulted in avoidable expenditure of Rs 3.32 crore on expansion of the IN system by five lakh lines.

1.11.2 Non-obtaining of additional performance bank guarantees

As per the terms and conditions of the purchase orders issued for procurement of CMTS equipment, in case of delay in execution of the orders by the suppliers, BSNL at its discretion could give extension upto 20 weeks subject to furnishing of additional performance bank guarantees (PBGs) by the suppliers to the extent of five *per cent* of the total value of the concerned purchase orders.

A test check of the records in the Assam and West Bengal circles revealed that the required additional PBGs amounting to Rs 8.25 crore were not obtained from the suppliers by these circles despite delays in commissioning of the CMTS system

equipment under phases-I to III of the IMPCS project ranging from 3 weeks to 29 weeks as detailed in Appendix-III.

It was further noticed that in January 2006, the corporate office waived the condition regarding additional PBGs from the suppliers in case of delays in commissioning of the CMTS system equipment under phase-IV of the IMPCS project on the grounds of availability of initial PBGs against the purchase orders and the fact that full payments had not been released to the suppliers. This decision of the corporate office not only contravened the terms and conditions of the purchase orders but also resulted in extending undue benefit to the suppliers concerned to the extent of Rs 19.59 crore by the Assam, Bihar, Madhya Pradesh and Uttar Pradesh (West) circles in the form of not obtaining the additional PBGs despite delays ranging from 13 weeks to 55 weeks in commissioning of the CMTS system equipment under phases-IV to IV++ of the IMPCS project as detailed in Appendix-III.

1.11.3 Non-recovery of liquidated damages

As per the terms and conditions of the purchase orders issued for procurement of CMTS equipment under phases-I to IV of the IMPCS project, in case of delays in delivery, installation and commissioning of the system equipment by the suppliers, BSNL was entitled to recover liquidated damages at the rate of 0.5 *per cent* of the value of purchase order for each week of delay or part thereof for a period upto 10 weeks and thereafter, at the rate of 0.7 *per cent* of the total value of the purchase order for each week or part thereof for another 10 weeks of delay.

In January 2006, the corporate office permitted the heads of circles to allow additional 20 weeks of extension in commissioning of the CMTS system equipment under phase-IV of the IMPCS project beyond the initial 20 weeks with levy of additional liquidated damages at the rate of 0.7 *per cent* of the total value of the purchase order per week or part thereof.

During the test check in 12 circles[¶], it was noticed that there were delays ranging from three weeks to more than two years in commissioning of the CMTS systems equipment under phases-I to IV of the IMPCS project but the related liquidated damages amounting to Rs 273.68 crore for these delays were not recovered from the suppliers concerned by these circles as detailed in Appendix-IV. Besides, these delays had also resulted in the loss of potential customer base in the present competitive scenario with consequential loss of revenue to BSNL.

[¶] Assam, Chhattisgarh, Haryana, J&K, Karnataka, Kerala, Maharashtra, Orissa, Rajasthan, Uttar Pradesh (East), Uttar Pradesh (West) and West Bengal

1.11.4 Non-recovery of excess payments to suppliers

As per the terms and conditions of purchase orders placed on provisional price basis during 2002-04 on the existing suppliers for the procurement of additional CMTS systems (25 *per cent* of quantities procured under phase II) under phase II⁺ of the IMPCS project, the payments were to be released as under:

- 30 *per cent* on the supply of all indigenous and imported system equipment in satisfactory condition.
- 50 *per cent* on successful acceptance, installation and commissioning of all indigenous and imported system equipment
- 20 *per cent* after one year of successful commissioning of the entire equipment or 80 *per cent* loading of the equipment supplied, whichever was earlier.

However, anticipating around 35 *per cent* downward trend in the prices of CMTS system equipment, the corporate office directed (November 2004) all circles that payment proposed to be released to the suppliers against the above purchase orders for phase II⁺ should provisionally be restricted to 65 *per cent* of the total cost. It was also directed that any payment over and above 65 *per cent*, if already made, should be recovered from these suppliers while making payments to them for CMTS system equipment to be procured under phase III and phase III⁺ of the IMPCS project.

It was noticed in audit that during April 2004 to December 2004, the Andhra Pradesh, Orissa and Uttar Pradesh (West) circles made excess payments aggregating Rs 29.92 crore to the suppliers for the CMTS systems procured from them under phase-II⁺. However, these excess payments were not recovered from the concerned suppliers while releasing payments to them for the CMTS systems subsequently procured for phases-III and III⁺ of the IMPCS project. The delay in recovery of the above amount of Rs 29.92 crore resulted in cash flow problems and avoidable interest charges on borrowed money.

1.11.5 Irregular expenditure on civil & electrical works

As per the terms and conditions of the purchase orders for procurement of CMTS equipments, civil & electrical works relating to towers/poles/foundations, supporting structure, antenna mounting structure, etc were the responsibility of the concerned suppliers for which no separate charges were payable to them.

It was noticed in audit that in violation of the above terms and conditions of the purchase orders, the Madhya Pradesh Circle (in Gwalior & Hoshangabad SSAs) and the Chhattisgarh Circle (in Raipur, Durg, Ambikapur, Jagdalpur and Bilaspur SSAs) spent Rs 31.49 lakh and Rs 57.97 lakh on such civil & electrical

works. However, these circles had so far not taken any action to recover the above amounts from the suppliers concerned (July 2006).

1.11.6 Excess expenditure on procurement of SIM cards at higher rate

The Gujarat Circle placed (January 2003) a purchase order on ITI, Bangalore for supply of SIM cards for 1.78 lakh pre-paid connections and 1.56 lakh post-paid connections at the rate of Rs 153.59 per SIM card. These quantities of SIM cards were revised (February 2003) to 1.31 lakh cards for pre paid connections and 1.53 lakh cards for post paid connections.

It was noticed from the records of the Gujarat Circle that before placement of the above purchase order, Palakkad unit of ITI had offered (January 2003) to supply the above SIM cards at the rate of Rs 120 per card. However, this offer was not considered by the Gujarat Circle and the order was placed on ITI, Bangalore at a price which was higher by Rs 33.59 per SIM card and which resulted in excess expenditure of Rs 95.34 lakh.

On this being pointed out by Audit, the local management while confirming the facts stated that based on the authorization received from the corporate office, this procurement was done on an urgent basis. The reply did not reflect the correct position as the lower rate offered by Palakkad unit of ITI was known to the local management before placement of the purchase order in January 2003.

1.11.7 Irregular reimbursement of excise duty

As per instructions contained in the Procurement Manual and the terms and conditions of the purchase orders, the vendors were required to furnish the proof of actual payment of excise duty/octroi (such as excise gate pass/ excise invoice/ octroi/entry tax challans, etc) to the paying authorities concerned for claiming the refund thereof. However, in the Maharashtra circle it was noticed that an amount of Rs 88.18 lakh was paid to ITI towards refund of excise duty based on the excise invoice prepared by ITI itself. The payment towards excise duty should have been made to ITI on production of proof of actual payment duly acknowledged by the Excise Department as stipulated in the instructions/terms and conditions cited above.

On this being pointed out, the local management stated that the payment was released based on the excise invoice copy received from ITI. It was further stated that the proof of actual payment of excise duty had been called for from ITI.

1.11.8 Loss of potential revenue due to non availability of recharge coupons/top up cards

- With effect from July 2005, BSNL launched a new range of recharge coupons in the name of 'top up' cards valued at Rs 200 and

Rs 500 per card with full talk value to facilitate those pre-paid customers who had already exhausted the talk value of their existing recharge coupons but the coupons' validity was still there. 'Top up' cards valued at Rs 50 and Rs 100 per card were also launched with effect from December 2005.

It was noticed in audit that there was acute shortage of 'top up' cards in the Uttar Pradesh (West) Circle during May –June 2006. The stock position of 'top up' cards valued at Rs 50 per card remained 'Nil' during the period from 9 May 2006 to 12 June 2006 in the Circle Telecom Store Depot (CTSD) where such cards were received for distribution to all the SSAs of the Circle. Similarly, only two thousand 'top up' cards valued at Rs 100 per card were in stock from 12 May 2006 to 12 June 2006 (against the average consumption of 3731 cards per day) and during this period no cards were issued from the CTSD to any SSA for sale. Due to non-availability of these cards, the Circle suffered a loss of potential revenue* of the order of Rs 2.17 crore.

The supply of recharge coupons valued at Rs 300 per coupon was also not sufficient which was evident from the facts that no cards were issued from CTSD to any SSA for sale during the period 26 May 2006 to 6 June 2006. The loss of potential revenue* to the Circle due to non-availability of such recharge coupons for sale to the customers worked out to Rs 2.75 crore.

Thus, due to non-availability of 'top up' cards and recharge coupons, BSNL not only suffered loss of potential revenue of Rs 4.92 crore but this had also resulted in customer dissatisfaction.

The main reasons for above shortage of cards/coupons were delays in supply by the vendors concerned and non-fixation of minimum & maximum stock levels by the Circle to ensure timely decision for ordering for the same.

- During review of records relating to demand for recharge coupons/top up cards made by franchisees and supply made to them in Etawah SSA under the Uttar Pradesh (West) Circle, it was noticed that the demanded quantity of recharge coupons/top up cards were not supplied to the franchisees during the period from 13 April 2006 to 19 August 2006. The value of short supply of recharge coupons/top up cards worked out to Rs 4.21 crore. On this being pointed out by Audit, SSA authorities replied (August 2006) that due to non-supply of sufficient number of recharge coupons/top up cards by the Circle office, the demanded quantity of recharge coupons/top up cards were not issued to the franchisees. Thus short supply of recharge coupons/top up cards to the franchisees resulted

* Computation based on consumption pattern

in a loss of potential revenue of Rs 4.21 crore to BSNL during the period from 13 April 2006 to 19 August 2006.

In their reply, the Circle management stated (August 2006) that the supply of recharge coupons/top up cards made by the vendors was very irregular. It was further stated that the corporate office had been requested to allow multiple options like electronic recharge, distribution through Compact Disc, etc to improve the situation.

1.11.9 Loss of potential revenue due to delay in expansion of network in West Zone

BSNL Board in May/July 2003 decided upon further expansion of CMTS capacity in the West Zone under phase-III of the IMPCS project. This capacity expansion work was to be done by ITI with support from Lucent. The demand projections and allotments of CMTS systems made to different circles under West zone for phase-III were as under:

Circle	Demand projected (in lakh lines)	Capacity allotted (in lakh lines)
Gujarat	2.86	1.65
Madhya Pradesh (including Chhattisgarh)	0.31	0.55
Maharashtra	2.08	2.17
Total	5.25	4.37

It was noticed in audit that the above demand projections were based on the demand for the five months from November 2003 to March 2004. But due to discontinuance of support by Lucent, ITI could not continue the expansion work in the West Zone under phase-III. Thus, the CMTS capacity in the West Zone could not be increased for 15 months from November 2003 to January 2005. Consequently, BSNL not only failed to meet the growing demand for CMTS connections in the West Zone but also lost the opportunity to earn the potential revenue* of Rs 265.60 crore (approx).

RECOMMENDATIONS

BSNL should:

- **insist on proper performance bank guarantees from suppliers to safeguard its financial interest.**
- **monitor the compliance of the terms and conditions of the purchase orders by its circles to avoid financial losses.**
- **ensure timely supply of equipment and accessories like top-up cards.**

* Based on average revenue per CMTS line actually earned by BSNL during 2003-05

1.12 OPERATIONAL PERFORMANCE

In order to ensure optimal operational performance of CMTS equipment, it was imperative that their equipped capacity was optimally utilised, operational targets for release of connections were achieved, maintenance of system equipment was properly done, prescribed benchmarks for the quality of service were adhered to and adequate marketing support was provided.

The deficiencies noticed in capacity utilisation, achievement of operational targets, maintenance of the system equipment, quality of service and marketing of CMTS are discussed in the succeeding paragraphs.

1.12.1 Non-achievement of optimal capacity utilisation

The status of CMTS installed capacity vis-a-vis actual utilisation in BSNL as at the end of each of the last four years upto 2005-06 was as under:

As at the end of year	Installed capacity (in lakh lines)	Capacity utilisation (in lakh lines)	Percentage of capacity utilisation
2002-03	26.90	22.56	83.87
2003-04	48.61	52.54	108.08
2004-05	94.92	94.47	99.53
2005-06	193.53	171.64	88.69

As could be seen from the above table, the percentage of capacity utilisation (i.e. the customer base) had gradually decreased from 108.08 in 2003-04 to 88.69 in 2005-06.

On analyzing the zone-wise and circle-wise capacity utilization at the end of March 2006, Audit observed the following:

- The capacity utilisation in the West zone was 113.02 *per cent*, which was much better than BSNL's overall capacity utilisation of 88.69 *per cent*. However in the East, South and North zones, it was 82.23 *per cent*, 85.55 *per cent* and 87.72 *per cent* respectively, which was below the BSNL's overall capacity utilisation of 88.69 *per cent*.
- The capacity utilisation in 12 circles* and both the telephone districts (Chennai and Calcutta) at the end of March 2006 ranged between 61.99 *per cent* (North East-I Circle) and 88.67 *per cent* (Uttaranchal Circle), which was below the BSNL's overall capacity utilisation of 88.69 *per cent*. However, the capacity utilisation in the

* Andhra Pradesh, Bihar, Haryana, Himachal Pradesh, North East-I, North East-II, Orissa, Punjab, Tamil Nadu, Uttar Pradesh (West), Uttaranchal and West Bengal

remaining 12 circles^Ψ ranged between 91.02 *per cent* (Karnataka Circle) and 138.97 *per cent* (Madhya Pradesh Circle), which was above the BSNL's overall capacity utilisation of 88.69 *per cent*.

It was further noticed that the capacity utilisation in all the four circles (Maharashtra, Gujarat, Madhya Pradesh and Chhattisgarh) located in the West zone and the Kerala Circle in South zone and Jammu and Kashmir Circle in North zone was above 100 *per cent* of the system capacities installed in these circles. This was indicative of stretching the system capacities beyond their limits, which could result in network congestion and system failures leading to customer dissatisfaction. Similarly, the capacity utilisation below the BSNL's overall capacity utilisation in case of 12 circles and both the telephone districts was indicative of the need for improved capacity planning.

1.12.2 Non-achievement of operational targets for release of CMTS connections

Audit noticed that the Tenth Five Year Plan target for providing of 223.84 lakh CMTS connections by BSNL during the period 2002-07 was much less compared to the operational target fixed by BSNL for providing of 329 lakh connections during the four-year period 2002-06. However, against these targets, the actual capacity installed and connections provided to the customers by BSNL upto March 2006 were only 193.53 lakh lines and 171.64 lakh connections respectively.

The status of BSNL's achievement of its own annual operational targets for release of connections for the last four years upto 2005-06 was as under:

Year	Target	Connections released during the year	Percentage of achievement
		(in lakh lines)	
2002-03 [#]	24.00	22.39	93.29
2003-04	30.00	29.98	99.93
2004-05	70.00	41.93	59.90
2005-06	205.00	77.16	37.64
Total	329.00	171.46	52.12

As could be seen from the above table, BSNL had not been able to achieve the targets for release of CMTS connections during the period 2002-06. The overall achievement of the cumulative targets for these four years was only 52.12 *per cent*. Moreover, there had been a downward trend in achievement of targets during 2004-05 and 2005-06 as the achievement had declined by 40.03 *per cent* in 2004-05 and by 22.26 *per cent* in 2005-06 compared to the preceding years.

^Ψ Andaman & Nicobar islands, Assam, Chhattisgarh, Gujarat, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh (East)

[#] As on 31 March 2002, CMTS connections released to the customers were 0.18 lakh

On analyzing the year-wise and circle-wise achievement of annual targets for the years 2002-03 to 2005-06, Audit observed that many circles failed to achieve the targets as detailed below:

Year	Targets for release of connections not achieved by
2002-03	Seven circles ^ψ and both the telephones districts
2003-04	Eight circles [£] and Calcutta telephones district
2004-05	20 circles [¥] and Calcutta telephones district
2005-06	22 circles [*] and both the telephones districts

The Punjab and Madhya Pradesh circles had not been able to achieve the targets in any of the years during 2002-06.

Non-achievement of targets for the years 2004-05 and 2005-06 by a large number of circles was indicative of fixation of too optimistic targets for both these years. The other reason for non-achievement of the annual targets for release of CMTS connections was inadequate capacity. The installed capacity as at the end of 2005-06 was only 191.53 lakh lines which was only 58.22 *per cent* of the cumulative target of 329 lakh lines.

1.12.3 Slow growth in the CMTS customer base

A review of the records of the corporate office pertaining to surrender of CMTS connections by the customers and disconnections done by BSNL due to non-payment of dues (DNP) by the customers revealed that the total number of customers as of 31 March 2006 and 31 July 2006 was 171.02 lakh (post-paid: 37.66 lakh, pre-paid: 133.36 lakh) and 186.31 lakh (post-paid: 35.09 lakh, pre-paid: 151.22 lakh) respectively. However, as per the circle-wise MIS records maintained at the corporate office, the total CMTS customer base of BSNL as of 31 March 2006 and 31 July 2006 was 171.64 lakh and 187.03 lakh respectively. Audit observed that there was a difference of 0.62 lakh and 0.72 lakh in the CMTS customer base of BSNL as of 31 March 2006 and 31 July 2006 as per above two sets of records, which had not been reconciled.

It was further noticed that a total of 51.47 lakh CMTS connections (post-paid: 16.41 lakh, pre paid: 35.06 lakh) were closed since launching of CMTS during October 2002 to March 2006 in all 24 circles^β and two telephone districts due to surrender by the customers and disconnections done by BSNL due to non-payment of dues by the customers. The closure of CMTS connections increased to 71.70 lakh (post-paid: 21.27 lakh, pre-paid: 50.43 lakh) as of July 2006 in all 24 circles^δ and two telephone districts.

^ψ Andhra Pradesh, Bihar, Madhya Pradesh, Punjab, Tamil Nadu, Uttar Pradesh (East) and Uttaranchal

[£] Assam, Chhattisgarh, Gujarat, Karnataka, Kerala, Madhya Pradesh, North East-I and Punjab

[¥] Except Jammu & Kashmir, Karnataka, Kerala and Tamil Nadu

^{*} Except Andaman & Nicobar island and Jammu & Kashmir

^β Except Assam Circle (post-paid) and Chhattisgarh Circle (pre-paid)

^δ Except Assam Circle (post-paid) and Chhattisgarh Circle (pre-paid)

During the period of four months from April 2006 to July 2006, 20.23 lakh CMTS connections were closed against the net growth in customer base by 15.28 lakh during this period.

Separate details of surrender of connections by the customers and reasons for their surrender and the disconnections done by BSNL due to non-payment of dues by the customers were not available in the records. Audit noticed that poor network coverage, poor quality of service and inadequate customer care, as discussed in succeeding paragraphs, were the main reasons for surrender of CMTS connections by the customers.

1.12.4 Non-achievement of the optimal operational performance of CMTS systems

The optimal operational performance of CMTS depended upon good network coverage and uninterrupted functioning of the system equipment. To ensure this, CMTS equipment should have been constantly covered either by warranty or by annual maintenance contracts (AMCs).

The deficiencies noticed in the execution of the terms and conditions of warranty and the execution of AMCs were as under:

1.12.4.1 Delays in entering into Annual Maintenance Contracts

As per the provisions contained in the purchase orders for procurement of CMTS systems under phases I and II of the IMPCS project, Annual Maintenance Contracts (AMCs) were to be entered into with the vendors by the concerned circles immediately after the expiry of the warranty period. It was noticed in 10 circles^λ and the Calcutta Telephones District that the signing of the AMCs was delayed between 67 days and 481 days from their due dates but these AMCs were made effective retrospectively from the due dates and even payments for AMC charges of Rs 17.98 crore were also made to the vendors by these circles (except Karnataka and North East-I circles) from the due dates as detailed in Appendix-V. However, as AMCs were signed after due dates, no payment of AMC charges for the period of delay should have been made. Hence, besides delaying signing of AMCs, undue benefit to the extent of Rs 17.98 crore was extended to the vendors by these circles.

1.12.4.2 Non-levy and non-recovery of penalty

As per the terms and conditions of the AMC, the original defective components/sub-systems were to be replaced/rectified by the vendor within 21 days of reporting of the same to him. In case of delay beyond 21 days, the vendor was to be charged penalty at the rate of Rs 2000 per day for 30 days and at the rate of Rs 5000 per day thereafter.

^λ Andhra Pradesh, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, North East-I, Orissa and Rajasthan.

Any fault affecting quality of service/availability of services of 5 per cent of the links/customers was to be treated as a major fault. All such faults were to be rectified by the vendor within three hours of their reporting to them. Any fault affecting the quality of service/availability of less than 5 per cent of the links/customers was to be treated as a minor fault. All minor faults were to be rectified by the vendor within six hours of their reporting to him.

In case the vendor failed to rectify major/minor faults within the stipulated period, he was liable to pay penalty at the rate of Rs 5,000/- per hour for major fault and Rs 2,500/- per hour for minor fault for the entire period of breakdown including Saturdays, Sundays and Holidays.

Audit noticed that despite delays ranging from 18 hours to more than 18 months in rectification of faults of the CMTS system equipment during the AMC periods by the vendors, penalty of Rs 26.98 crore was not recovered from them by the Bihar, Gujarat, Jharkhand, Orissa, Punjab and Uttar Pradesh (West) circles and the amount of penalty to be recovered from the vendors was not even worked out by the Tamil Nadu and Maharashtra circles as detailed in Appendix-VI. This amounted to extending of undue benefits to the vendors. The local management of Gujarat, Punjab, Bihar, Jharkhand, Uttar Pradesh (West) and Tamil Nadu circles while accepting the audit comment stated that it would take appropriate action.

1.12.4.3 Non-rectification of faults of CMTS system within the warranty period

As per the terms and conditions of the purchase orders, the warranty of stores/equipment supplied was for minimum of 12 months from the date of commissioning of the complete network in the circle. During the warranty period, the supplier was to perform all the functions as prescribed for the AMC period, free of cost. The penalty provisions prescribed for AMC period were also applicable during the period of warranty in case of failure on the part of the supplier.

A test check in audit revealed that the suppliers did not rectify the faults in the CMTS system equipment timely and did not attend to the problems relating to faulty cards, power plants, BTS, battery sets and poor network coverage, etc during the warranty period in the Bihar, Madhya Pradesh, Maharashtra and Uttar Pradesh (East) circles. It was further noticed that despite failure of the suppliers to rectify the faults during the warranty period, the Madhya Pradesh Circle did not recover the penalty of Rs 1.37 crore from the concerned supplier whereas the Bihar and Maharashtra circles did not even workout the amount of penalty to be recovered from the suppliers. Though the Uttar Pradesh (East) Circle withheld release of payment of Rs 3.75 crore due to the supplier concerned, no action was taken to recover the penalty so far.

1.12.5 Non recovery of the loss incurred due to frauds committed by the customers booked through franchisees

As per the agreements, the franchisees were required to indemnify BSNL against all types of embezzlement, misappropriation or misapplication of money. Further, the franchisees were to fully indemnify BSNL against all losses, claims for damages or any other claims of whatsoever nature, which were brought against BSNL by any third party owing to any action attributable to the dealers. Such losses were to be recovered from the dealers in addition to encashment of their performance bank guarantees.

In the Gujarat Circle, Audit noticed that the agreements of nine franchisees were terminated and their performance bank guarantees amounting to Rs 45 lakh were adjusted against the amount of Rs 6.10 crore outstanding from the defaulting customers, who were booked through these franchisees. However, the remaining outstanding amount of Rs 5.65 crore was not recovered from these franchisees, which was against the terms and conditions of the agreements entered with them. This resulted in a loss of Rs 5.65 crore to BSNL.

1.12.6 Poor performance of customer care centres

The work of customer care is got done either through five Interactive Voice Response System (IVRS) call centres located at Ahmedabad, Bangalore, Gurgaon, Pune and Kolkata or the customers care centres located in each circle.

The examination of IVRS call centres' performance reports revealed that out of the calls made by the CMTS customers to the call centres, on an average 24 per cent (2004-05), 28 per cent (2005-06) and 40 per cent (2006-07) of the total calls terminated without being answered either due to loss of calls between the Mobile Switching Service Centres (MSCs) and the call centres or loss of calls at IVRS. The call centre-wise status of average loss of customers' calls was as under:

Call Center	Percentage of calls to the total calls not answered by the call centre		
	2004-05 (last 6 months)	2005-06 (for 12 months)	2006-07 (initial 3 months)
Ahmedabad	21	17	32
Bangalore	22	33	50
Gurgaon	21	22	44
Pune	47	58	39
Kolkata	11	10	36
Average	24	28	40

The percentage of customers' calls not answered by the call centres had shown an increasing trend, which was not a good sign as it could lead to customers' dissatisfaction which could ultimately affect the CMTS customer base of BSNL in the present competitive scenario.

1.12.7 Customers' complaints not addressed by the concerned circles

During test check of records of Gujarat, Jharkhand, Orissa, Uttar Pradesh (East) and Uttaranchal circles and the Calcutta Telephones District, it was noticed that various complaints received from the customers were not rectified in time, which resulted in customer dissatisfaction, surrender of connections, etc. These complaints pertained to issue of used/pre-activated recharge coupons, issue of blank recharge coupons without serial numbers/secret codes, shortage of scratch cards, poor network coverage, network congestion, call drops, cross connections, excess tariff, excess billing, reduced balances, non-carry forward of the existing balances, etc. However, no action was taken against the vendors/customer care centres concerned for their failure to timely rectify the above complaints.

1.12.8 Poor quality of CMTS

Quality of Service (QoS) is the main indicator of the performance of a telephone service as well as of the degree to which the service conforms to the stipulated benchmarks. The benchmarks prescribed by TRAI for the 'Quality of service performance of cellular mobile operators' were applicable to CMTS provided by BSNL. The quality of CMTS provided by BSNL was not completely satisfactory in most of the circles as there were complaints regarding poor network coverage, system failures, low signals or no signals, call dropping, not attending to the customers' complaints, etc as discussed in the preceding paragraphs.

The scrutiny of quarterly MIS reports on the quality of CMTS revealed that for varying periods ranging from 18 months to 33 months during April 2003 to June 2006, the quality of service benchmarks fixed by TRAI such as "Percentage of connections with good voice quality", 'Billing complaints/100 bills issued', 'Call success rate', and 'Accumulated down time of community isolation' were not achieved by various circles as detailed below:

- The 'Percentage of connections with good voice quality' parameter was lower than TRAI's benchmark in six circles[‡] for the period ranging from 18 months to 24 months.
- The 'Billing complaints/100 bills issued' parameter was higher than TRAI's benchmark in five^{*} circles and the Calcutta Telephones District for periods ranging from 18 months to 33 months.
- The 'Call success rate' parameter was below than TRAI's benchmark in 12 circles^λ and the Calcutta Telephones District for periods ranging from 18 months to 33 months.

[‡] Bihar, Himachal Pradesh, Kerala, Orissa, Punjab and Rajasthan

^{*} Bihar, Kerala, Maharashtra, Punjab and Rajasthan

^λ Bihar, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Orissa, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh (East)

- The ‘Accumulated down time of community isolation’ parameter was higher than TRAI’s benchmark in five circles^β for periods ranging from 18 months to 27 months.
- Further, the network congestion was one of the most important parameters in the quality of CMTS. TRAI, in June 2003, issued instructions to all CMTS operators to monitor values of certain parameters related to network congestion. The examination of monthly congestion reports in respect of 20^ψ circles and both the telephones districts revealed that:
 - Stand-alone Dedicated Control Channel congestion during the years 2004-05 and 2005-06 was 3.7 *per cent* and 1.9 *per cent* respectively, which was relatively higher than the benchmark of less than 1 *per cent* as fixed by TRAI.
 - Traffic Control Channel congestion during the years 2004-05 and 2005-06 was alarmingly high with an average of 11.2 *per cent* and 5.2 *per cent* respectively against the TRAI’s benchmark of less than 2 *per cent*.

These congestions had not only resulted in the loss of potential revenue due to failure of the customers’ calls but also in churning in the CMTS customer base of BSNL.

RECOMMENDATIONS

BSNL should:

- **prepare appropriate strategies for ensuring optimum utilisation of the equipped capacity of its CMTS systems and achievement of operational targets for release of connections.**
- **ensure timely signing of AMCs for CMTS systems.**
- **monitor the performance of the suppliers in carrying out their responsibility towards providing adequate and uninterrupted network coverage during warranty and AMCs to avoid the risk of poor quality of service.**
- **ensure proper coordination among its customer care centres and operational wings for minimising the delays in attending to customers’ complaints.**
- **ensure adherence to the quality of service norms fixed by TRAI to avoid the risk of migration of customers to other operators.**

^β Kerala, Maharashtra, Orissa, Punjab and Rajasthan

^ψ Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, J&K, Karnataka, Kerala, Madhya Pradesh, Maharashtra, North East-I, North East-II, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh (East), Uttar Pradesh (West) and West Bengal

1.13 SYSTEM OF BILLING, COLLECTION AND ACCOUNTING OF CMTS REVENUE

The Billing & Customer Care Systems (B&CCS) of BSNL located at Chandigarh, Hyderabad, Kolkata, Pune and Trichy caters to the billing operations of post-paid customers of BSNL for all its circles. Management of pre-paid connections in BSNL is handled separately by Intelligent Network (IN) systems located at different SSAs in each circle.

In case of post-paid connections, the revenue billing and collection from the customers is done at the end of prescribed billing cycle. However, in case of pre-paid connections, the release of connection is done after obtaining the payment in advance and further recharge coupons are also issued after obtaining the value of the recharge coupons in advance. Collection and accounting of revenue from the pre-paid and the post-paid customers is done in the respective SSAs of the concerned circles.

Audit scrutiny revealed various inadequacies in billing, collection and accounting of CMTS revenue as discussed in the succeeding paragraphs.

1.13.1 Accumulation of revenue arrears relating to post-paid customers

The status of CMTS revenue billed, collected and outstanding for the last three years upto 2005-06 pertaining to the post-paid customers of 22 circles^ψ and both Calcutta and Chennai Telephones Districts test checked by Audit was as under:

Year	Outstanding at the beginning of the year	Billed during the year	Total revenue due for recovery (2+3)	Collected during the year	Outstanding for recovery at the end of the year (4-5)	Percentage of revenue collected to total revenue due for recovery (5/4X100)
(Rupees in crore)						
1	2	3	4	5	6	7
2003-04	40.66	1143.26	1183.92	844.88	339.05	71
2004-05	339.05	1611.75	1950.81	1536.36	414.45	79
2005-06	414.45	2099.30	2513.75	2021.67	492.08	80

As could be seen from the above table, the revenue outstanding for recovery from the post-paid customers had shown an increasing trend as it had increased from Rs 339.05 crore at the end of 2003-04 to Rs 492.08 crore at the end of 2005-06.

^ψ Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, J&K, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, North East-I, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh (East), Uttar Pradesh (West), Uttaranchal and West Bengal

The revenue collection efficiency (percentage of revenue collected during the year to the total revenue due for collection) had also improved from 71 *per cent* in 2003-04 to 80 *per cent* in 2005-06.

The circle wise* status of CMTS revenue billed, collected and outstanding for the last three years upto 2005-06 pertaining to the post-paid customers is detailed in Appendix-VII. As could be seen from the Appendix, the revenue collection efficiency of the circles had ranged between 44 *per cent* (Gujarat Circle) and 97 *per cent* (Chennai Telephones District) during 2003-04, 59 *per cent* (Punjab Circle) and 97 *per cent* (Chennai Telephones District) during 2004-05 and 62 *per cent* (Bihar and Punjab circles) and 97 *per cent* (Chennai Telephones District) during 2005-06.

1.13.2 Loss of revenue due to absconding post-paid customers

Audit observed that in 11 circles[¥] and Calcutta Telephones District, as detailed in Appendix-VIII, BSNL had incurred a loss of Rs 57.11 crore due to non recovery of outstanding revenue from the post-paid customers. The chances of recovery of the amount were remote as the whereabouts of the customers concerned were not known. The above revenue had become outstanding for recovery due to delays in implementation of threshold servers for monitoring the credit limits of the customers, failure to activate auto disconnection facility in the billing system, issue of connections without verifying the particulars of the customers and failure in monitoring of recovery. The above amount of Rs 57.11 crore includes Rs 2.33 crore pertaining to 54 fake ISD cases noticed in the Rajasthan Circle during 2002-03 due to delays in implementation of threshold server, which had already been commented upon in the CAG's Report No.5 of 2005 in para No. 2.2 (page 10) Appendix-1.

1.13.3 Inadequate disaster recovery plan and access controls for billing system

The objective of preparing disaster recovery plan is to ensure that the Management is able to process, retrieve and protect the information maintained in the system in the event of an interruption or disaster leading to complete or partial loss of data and/or computer facilities. Besides, effective password management for access to the system/data is also necessary to ensure the safety, confidentiality and security of the data.

Audit noticed that no disaster recovery plan had been formulated by BSNL for its five CMTS billing centres located at Chandigarh, Hyderabad, Kolkata, Pune and Trichy. It was further noticed that there was no segregation of duties and the users' utilized common user-ID and passwords in the billing systems.

* Except Andaman & Nicobar and NE-II circles

¥ Andhra Pradesh, Assam, Chhattisgarh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Uttaranchal

1.13.4 Non-reconciliation of revenue in time

As per instructions issued by the corporate office in October 2002, recharge coupons were to be treated as cash for all purposes and the Accounts Officers of the concerned SSAs were responsible for reconciliation and maintaining the accounts on day to day basis. Besides, revenue collection done through different sources was also required to be reconciled regularly for accounting purposes.

A test check in audit revealed that above instructions were not followed by five circles[¥] due to which revenue amounting to Rs 16.28 crore remained un-reconciled for varying periods during 2002-06 on account of non-reconciliation of sale of top-up cards, recharge coupons, credit balances of customers and revenue collected through bank as detailed in Appendix-IX. Audit observed that immediate action needed to be taken to reconcile the above revenue as BSNL may incur loss to the above extent.

1.14 CONCLUSION

The Tenth Five Year Plan target for BSNL for providing CMTS connections to the customers was 223.84 lakh. Against this, BSNL fixed annual targets aggregating 329 lakh for the period 2002-06 but could install systems having equipped capacity of 193.53 lakh lines upto March 2006 and the capacity utilisation there against as of March 2006 was 171.64 lakh lines.

Further, the expansion of CMTS by additional 635 lakh lines by December 2007 under phase-V of the IMPCS project was to provide a major thrust in the customer base of BSNL, but the tender issued only in March 2006 against the Board's initial approval in January 2005, had not been finalised as of September 2006.

Deficiencies in planning, creation of infrastructure, procurement, installation and commissioning of systems and network coverage and delays in rectification of faults in the CMTS systems during AMCs and warranty were also noticed. BSNL did not achieve the quality of service benchmarks prescribed by TRAI, which had adversely affected the customer base. BSNL suffered financial losses due to inadequate customer care and deficiencies in billing and collection of revenue.

BSNL at present is a major CMTS provider in the country. Keeping in view the stiff competition from other service providers, BSNL, not only needs to strengthen and improve its planning and procurement procedures but the systems for customer care, billing and collection of revenue also need to be monitored. The quality of service needs further improvement through better network coverage and customer care to achieve the benchmark prescribed by TRAI.

[¥] Chhattisgarh, J&K, Maharashtra, Orissa and Uttar Pradesh (East)