

CHAPTER I
Performance Audit Report of
Wireless-in-Local Loop Telephone Service in
Bharat Sanchar Nigam Limited

HIGHLIGHTS

- Bharat Sanchar Nigam Limited (Company) had a target of providing one Wireless-in-Local Loop (WLL) system in each of the 2,642 Short Distance Charging Areas (SDCAs) in the country till 2001-02, but even up to October 2005, it had not reached the target and had provided WLL systems only in 2,185 SDCAs.

(Paragraph 1.8)

- The capacity utilisation was 60.53 per cent against the total equipped capacity of 26.89 lakh lines of WLL systems as of March 2005 mainly on account of deficiencies in planning, procurements, network coverage and poor quality of service.

(Paragraph 1.12)

- The Company formulated the plans for launching of the WLL telephone service and its subsequent expansion with inadequate assessment of demand and requirement and did not consider identification of areas based on population and trade statistics, unutilised capacity, presence of private operators and the envisaged growth of its other telephone services.

(Paragraphs 1.9.1.1 to 1.9.1.4)

- Expansion of the capacity during 2002-03 to 2004-05 in seven circles despite underutilisation of the existing capacity, led to injudicious expenditure of Rs 108.64 crore on expansion.

(Paragraph 1.9.1.2)

- The Company procured WLL systems based on obsolete technologies valued at Rs 1,479.87 crore during October 2000 to March 2005 though the latest WLL CDMA 2000-1X technology was available since October 2000.

(Paragraph 1.9.2)

- The Company did not carry out financial viability and profitability analysis of the WLL projects during the years 2000-01, 2001-02 and 2003-04.

(Paragraph 1.9.3)

- Despite instructions, 13 circles and the two Metro districts did not prepare separate costing records for the WLL telephone service. The records showed a total loss of Rs 122.15 crore in seven circles.

(Paragraph 1.9.3)

- Ten circles, which prepared revenue projections for the WLL telephone service, failed to realize the projected revenue by Rs 139.31 crore during the last five years up to 2004-05.

(Paragraph 1.9.3)

- An amount of only Rs 22.05 lakh was spent during 2002-03 to 2004-05 on promotion and marketing of the WLL telephone service compared to Rs 14.25 crore spent on its Cellular Mobile Telephone Service during the above period.

(Paragraph 1.9.4)

- Most of the circles failed to make timely arrangements for sites, towers, power supply, etc, which led to delays in installation and commissioning of the WLL telephone systems.

(Paragraph 1.10.1)

- The corporate office's failure to monitor receipt of frequency allocations from the WPC Wing of the DoT resulted in operation of CorDect WLL telephone service in five circles and two Metro districts without mandatory 'Agreements in Principle'.

(Paragraph 1.10.2)

- The mandatory clearance of sites for installation of wireless equipment from the SACFA was not obtained for 1,330 sites by 19 circles.

(Paragraphs 1.10.3)

- Procurement of 40660 FWTs, 3,40,380 HHTs, 8,975 FRS and 8200 Wall Sets for 17 circles and two Metro districts without keeping in view the customers' preferences and demand led to idle investment of Rs 229 crore.

(Paragraph 1.11.1.2)

- Procurement of power plants and batteries without requirement by 12 SSAs under five circles and one Metro District resulted in blocking of funds to the extent of Rs 3.26 crore.

(Paragraph 1.11.1.3)

- The corporate office delayed the finalisation of rates of FWTs which resulted in excess payment of Rs 5.59 crore to M/s ARM Limited and M/s United Telecom Limited (UTL).

(Paragraph 1.11.2)

- Failure to obtain the PBGs and premature release of PBGs resulted in undue financial benefits of Rs 26.40 crore to suppliers.

(Paragraphs 1.11.3.1 and 1.11.3.2)

- Absence of any provision in the purchase orders for levy of penalty on suppliers for delays in installation, acceptance testing and commissioning resulted in blocking of capital of Rs 134.97 crore.

(Paragraphs 1.11.4)

- **The Company incurred a loss of Rs 11.97 crore due to non-levy or short levy of L.D. charges on suppliers who delayed the delivery of WLL equipment and terminals.**

(Paragraph 1.11.5.3)

- **The Company failed to achieve the annual plan targets fixed for replacement of faulty MARR, VPTs for the years 2003-04 and 2004-05 and for installation of new VPTs for the years 2001-02, 2002-03 and 2003-04.**

(Paragraphs 1.13.1.1 and 1.13.1.2)

- **In 16 SSAs of eight circles, due to poor radio frequency coverage of the WLL systems, the underutilisation of capacity ranged between 26 and 100 per cent, which led to blocking of funds to the tune of Rs 78.74 crore.**
- **The suppliers' response to attend to complaints regarding network coverage was poor, which led to non-provision of umbrella network coverage, system failures, very low signal or no signal in peak hours, call dropping, frequency overlapping, etc.**

(Paragraphs 1.13.2.1 to 1.13.2.2)

- **55475 defective WLL terminals were lying in 16 circles due to non-execution of AMCs with the suppliers, resulting in unremunerative investment of Rs 47.95 crore.**

(Paragraph 1.13.3)

- **Despite the closure of WLL connections, 16,712 FWTs and 20,590 HHTs were not recovered from the concerned customers in 16 circle and one Metro District, which led to a loss of Rs 25.94 crore.**

(Paragraph 1.13.4)

- **No bills were issued for any of the working connections in the J&K Circle and in the Agra SSA in the UP (East) Circle leading to short billing of revenue of Rs 9.40 crore.**

(Paragraph 1.14.2)

- **Improper monitoring of revenue collection in 35 SSAs under five circle and all SSAs under eight circle resulted in accumulation of revenue arrears of Rs 113.88 crore.**

(Paragraph 1.14.5)

- **Lack of an automatic disconnection facility in the billing packages resulted in delayed disconnections and accumulation of revenue arrears to the tune of Rs 42 crore in nine circle.**

(Paragraph 1.14.7)

- **A survey conducted by Audit, revealed that the Company had failed to achieve the quality of service norms prescribed by TRAI pertaining to release of connections, incidence of faults and their**

rectification, voice quality, getting connections to desired telephone numbers and provision of additional facilities like STD and ISD.

(Paragraphs 1.15.1.1 to 1.15.1.6)

GIST OF RECOMMENDATIONS:

- **The Company should review and strengthen its planning mechanism in the face of stiff competition to avoid the risk of delays and bottlenecks in initial and subsequent expansions of projects.**
- **The Company should conduct surveys and identify the areas based on population, trade statistics and the existing trends of demand for forecasting demand and requirements.**
- **The Company should exercise extreme caution in selecting technology for its various telecom services to avoid the risk of selection of obsolete technology.**
- **The Company should ensure preparation of separate costing records relating to the WLL telephone service by each Circle to ascertain the Circle-wise operational and financial viability of the WLL service.**
- **The Company should formulate appropriate marketing strategies for promotion of the WLL service both in urban and rural areas.**
- **The Company should prescribe time schedules for the various advance activities to be undertaken by circles for creation of necessary infrastructure.**
- **The Company should devise a monitoring mechanism for ensuring timely receipt of 'Agreements in Principle' from the WPC wing for use of allotted frequencies and clearances of SACFA for sites for installation of wireless equipment.**
- **The Company should ensure timely finalisation of firm rates for supplies to avoid the risk of wrong and excess payments to the suppliers.**
- **The Company should ensure simultaneous receipt of WLL equipment and terminals to avoid the risk of delay in release of connections and underutilisation of capacity due to shortages of terminals.**
- **The Company should ensure obtaining of proper performance bank guarantees from suppliers to safeguard its financial interest.**
- **The Company should monitor the performance of the suppliers in carrying out their responsibility towards providing adequate and uninterrupted network coverage to avoid the risk of poor quality of service and losing its customer base.**

- **The Company should take prompt action against suppliers who fail to attend complaints regarding poor network coverage in time.**
- **The Company should finalise the guidelines for execution of AMCs for WLL terminals urgently to avoid the risk of delays in repairs and accumulation of inventories of faulty terminals.**
- **The Company should strengthen the coordination between its various wings for ensuring complete billing and revenue realisation.**
- **The Company should ensure proper coordination amongst its customer care, commercial and operational wings for minimising the delays in attending to customers' complaints and requests for additional facilities to avoid the risks of losing them to their competitors.**
- **The Company should conduct surveys at regular intervals to obtain feedback from its customers about the quality of its WLL telephone services and take immediate corrective action on the same.**

1.1 INTRODUCTION

The Wireless-in-Local Loop (WLL) telephone system is a digital wireless local loop system designed to substitute underground cables by linking exchanges to the customers through wireless. WLL connections can be provided through various technologies. One of the most advanced technologies is the Code Division Multiple Access (CDMA), which allows many users to occupy the same frequency at the same time in a given band.

A typical WLL telephone system consists of Base Station (BS), Base Station Controller (BSC) or Mobile Switching Centre (MSC) connected to the Telephone Exchange or Public Switched Telecom Network (PSTN), Base Transceiver Stations (BTS), Network Management System (NMS) and Remote Stations (RS). A pictorial representation of the system is given at Appendix-I. The remote stations are the customers' terminals which communicate within the Base Station area.

The WLL telephone system has fixed as well as mobile facilities. In the fixed system, the customers' terminals are fixed like landline telephone instruments known as fixed wireless terminals (FWTs) or fixed remote stations (FRS) or wall sets (WS). In the mobile system, the customers' terminals are akin to cellular mobile telephone handsets known as handheld wireless terminals (HHTs).

The Department of Telecommunications (DoT) proposed the launching of the WLL telephone service in the country in 1994, mainly to provide telephone connections in technically non-feasible (TNF)* areas.

* TNF: areas where it is not possible to lay cable

DoT placed (June 1995) a purchase order for supply of two WLL systems of 1000 lines each, based on Cordless Telephony-second Generation (CT 2) technology, for field trials but the systems were decommissioned (January 1997) due to unsatisfactory performance and technological obsolescence.

DoT subsequently floated (June 1998) one tender for WLL CDMA equipment (IS-95A technology) and another tender for WLL CorDect* equipment. Meanwhile, the Government introduced (1999) the New Telecom Policy (NTP-99), which envisaged telephones on demand and telephone coverage of all the villages in the country by the end of 2002 under Universal Service Obligations (USO)[∞]

DoT placed (August-September 2000) purchase orders for WLL CDMA equipment for 56,000 lines and thereafter the Company placed (December 2000 and June 2001) add-on purchase orders equipment for 12,000 lines. For WLL CorDect equipment, the Company placed (November 2000) purchase orders for equipment of 25000 lines. The supplies of all these equipment were completed by March 2002.

The Company provides both fixed and limited mobile WLL telephone services under the brand name 'Tarang' The Allahabad and Gorakhpur Secondary Switching Areas (SSAs)[‡] of the Uttar Pradesh (East) Circle were the first to commission the WLL CDMA system in January 2001 and September 2001 in urban and rural area respectively.

1.2 ORGANISATIONAL SETUP

The overall control of the operation of the WLL telephone service rests with the Chairman and Managing Director (CMD) of the Company, who is assisted by Director (Operations) and Director (Planning and Network Management) at the corporate office and respective Chief General Managers (CGMs) at the Circle level.

1.3 SCOPE OF AUDIT

Performance audit of the WLL telephone service in the Company was conducted during April to August 2005, covering the period from 2000-01 to 2004-05. The corporate office, 24 telecom circles and the two metro districts of Chennai and Calcutta were reviewed in Audit. Further, thirty *per cent* of the SSAs, subject to a minimum of five SSAs in each telecom Circle were selected on the basis of their installed capacities.

* CorDect: Digital Enhanced Cordless Telecommunications system developed by IIT Madras, which is similar to CDMA.

[∞] USO: USO envisaged providing telephones on demand, besides telephone coverage in all villages in the country.

[‡] SSA: areas in which the country is divided by the telecom authorities. These are generally co-terminus with revenue districts.

1.4 AUDIT OBJECTIVES

The objectives of audit were to examine:

- whether the planning for launching and expansion of the WLL telephone service was adequate;
- whether the required infrastructure was kept ready before receipt and commissioning of the WLL equipment;
- whether procurement of the WLL equipment was economical, efficient and effective;
- whether the equipped capacity of the WLL system was optimally utilized;
- whether operational performance of the WLL system was effective;
- whether the system for billing and collection of revenue was economical, efficient and effective; and
- whether the quality of the WLL telephone service was satisfactory.

1.5 AUDIT CRITERIA

The main criteria used for audit were as follows:

- Proper planning in keeping with codal provisions for assessment of requirements, provision of infrastructure, selection of technology, availability of trained manpower and financial viability.
- Codal provisions for tendering and procurement.
- Terms and conditions of purchase orders.
- Operational and financial performance indicators fixed by DoT and the Company.
- Adherence to the performance indicators fixed by the Telecom Regulatory Authority of India (TRAI) 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 WLL telephone service on the basis of the audit criteria broadly outlined earlier.

A survey was also conducted by Audit to evaluate the quality of the WLL telephone service provided by the Company to the customers in rural and urban areas.

1.7 ACKNOWLEDGEMENT

For conducting Performance Audit, the audit teams of this office visited the corporate office, all the circles and two telephone districts of the Company including the SSAs falling under respective 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 the levels of management at various stages for completion of the Performance Audit. Performance Audit Report was issued to the Ministry/Management in December 2005 and the reply was awaited (January 2006).

1.8 AUDIT FINDINGS

The major objective before the Company on its formation in September 2000 was fulfillment of its Universal Service Obligations under NTP-99. As the WLL telephone service had been identified as the best method for providing telephone connections in TNF areas and villages, it was imperative on the part of the Company to plan the launch of WLL telephone service and its future expansions very carefully. The procurement procedures and practices had to ensure the best value for money for the supplies. There should have been optimal capacity utilisation and efficient operational performance. The system for billing and collection of revenue had to be foolproof. Above all, high quality of service should have been provided to the customers, both in rural and urban areas.

Audit observed that the equipped capacity of the WLL telephone service as on March 2005 was 16.90 lakh lines in rural areas and 9.99 lakh lines in urban areas against which the connections provided were only 11.32 lakh lines and 4.96 lakh lines respectively. The Company had a target of providing one WLL system in each of the 2642 Short Distance Charging Areas (SDCAs)* in the country till 2001-02 against which the Company provided WLL system in 2185 SDCAs upto October 2005.

Audit noticed deficiencies in planning, creation of infrastructure, procurement, capacity utilisation, operational performance, billing and collection of revenue and quality of the WLL telephone service, which needed to be addressed urgently, especially in the light of competition from private operators. These deficiencies are discussed in the succeeding paragraphs.

1.9 PLANNING

According to the codal provisions and internal instructions of the Company, all the 24-telecom circles and the two metro districts were to project their requirements for WLL equipment and terminals for initial launching and subsequent expansions of the WLL telephone service in their areas. Based on these projections, the corporate office was to assess the overall demand for the WLL equipment and terminals and plan for their procurement and commissioning.

According to the recommendations (December 1999) of an Empowered Committee headed by the Minister of State for Communications, it was planned to provide one WLL system in each of the 2,642 SDCAs in the

* SDCA: the smallest territorial unit for charging purpose. Calls within the same SDCA are charged as local calls. SDCAs normally coincide with Tehsils or Talukas.

country in the first two years of operation i.e. 2000-01 and 2001-02. The Committee also recommended the replacement of all non-functional Multi Access Rural Radio (MARR) based Village Public Telephones (VPTs) by the WLL system as connections through MARR proved to be unsatisfactory.

A review committee constituted (September 2000) by DoT to examine and suggest suitable access technologies, recommended (October 2000) that the WLL CDMA technology offered a better techno-economic solution for speedy installation of telephones in TNF areas and villages, especially those in remote areas.

While formulating detailed plans for initial launching and expansion of any telecom project, the following aspects, *inter alia*, needed to be addressed properly:

- Proper assessment of demand and requirement
- Identification and introduction of latest technology
- Assessment of the financial viability and profitability of the project
- Formulation of appropriate strategies for launching and marketing

Audit, however, observed that the above aspects of project management were not given due attention. Planning for initial launching as well as for expansions was done on ad hoc basis. Deficiencies noticed in the planning process are discussed in the succeeding paragraphs.

1.9.1 Inadequate assessment of demand and requirement of WLL equipment

Audit noticed the following deficiencies in assessment of demand and requirement in respect of the WLL telephone service:

1.9.1.1 Non-identification of the areas on the basis of population and trade statistics and existing trends of demand

While projecting (2000-01) the demand for initial launching of WLL operations and its subsequent expansions, only three circles, viz., Andhra Pradesh, Karnataka and Tamil Nadu and the Chennai Telephone District considered the population and trade statistics and six circles viz., Andhra Pradesh, Chattisgarh, Karnataka, Madhya Pradesh, Maharashtra and Tamil Nadu and the Chennai Telephone district considered the waiting list and the anticipated growth in demand of the areas to be covered. The corporate office did not insist upon the other circles to identify the areas to be covered on the basis of their population and trade statistics.

CMD of the Company approved (June 2001), the conducting of a market survey through a reputed agency to assess the likely demand and customers' responses for WLL connections. The Planning Wing of the corporate office did not conduct any such survey, stating (October 2001) that the customers' responses to WLL connections already provided in urban areas were very good and conducting the survey would be very costly. It was noticed that the estimated cost of the survey, Rs 36 lakh was a nominal amount compared to the expenditure to be incurred on the project.

The survey would have helped the Company in assessing the likely demand in each Circle more accurately. Instead, the circles were simply instructed (April/June 2002) by the corporate office to plan for one BTS per SDCA, one BSC per SSA and one MSC at the Circle headquarters.

1.9.1.2 Non-consideration of the unutilized capacity

The expansion of the WLL project commenced mainly from 2002-03. Audit observed that while projecting the demands for expansion of their existing capacity for the year 2002-03 and the subsequent years, only four circles[†] and the Chennai Telephone District took the unutilized capacity of their existing WLL exchanges into account. Similarly, while drawing up the overall expansion plan for the WLL system for the year 2002-03, the unutilized capacities of the existing WLL exchanges were not considered by the corporate office.

It was also noticed that in 22 SSAs under seven circles[‡], detailed in Appendix-II, the total number of working connections at the time of expansion (April 2002 to February 2004) was only 16283 against the installed capacity of 110850 lines mainly due to poor demand and shortages of WLL terminals. In spite of this, the existing capacity was expanded by 113650 lines. As of March 2005, the total number of working connections was only 94866 which was less than the initial capacity of 110850 lines. The expansion of capacity was thus unwarranted and resulted in injudicious expenditure of Rs 108.64 crore.

1.9.1.3 Non consideration of the impact of WLL telephone services provided by private operators

While planning for capacity expansion of the WLL systems, especially in urban areas, the impact of the presence of private operators should have been considered for a more realistic assessment of demand. Year-wise status of the coverage by private operators could have been ascertained from their rollout obligations[#] available in DoT or from their websites. Audit observed that only three circles, viz., Andhra Pradesh, Kerala and Maharashtra and the two metro districts at Chennai and Calcutta considered the impact of the WLL telephone services provided by private operators in their areas in projecting their demands for the period 2001-02 to 2004-05. Even the corporate office did not consider this impact.

1.9.1.4 Non consideration of the envisaged growth of Company's own landline service and Cellular Mobile Telephone Services

It was noticed that only Tamil Nadu Circle and the Calcutta Telephones District considered the anticipated growth of their own landline service and Cellular Mobile Telephone Service (CMTS) while projecting demands for capacity expansion of their WLL systems for the years 2001-02 to 2004-05.

[†] Andhra Pradesh, Karnataka, Maharashtra and Tamil Nadu.

[‡] Bihar, Haryana, Jharkhand, Punjab, UP (E), UP (W) and West Bengal.

[#] Rollout obligations: Obligations of licensees to commence services within a prescribed time frame and cover the service area, stipulated in the licences received from DoT.

The corporate office, however, considered the envisaged overall growth of its own CMTS while planning for the overall expansion of the capacity of the WLL system for the above years.

1.9.2 Non- introduction of latest technology

The Planning and Network Switching Wing of the corporate office ascertains the availability of various technologies in the market and thereafter submits proposals for procurement of the most suitable ones.

During 2000-01 to 2004-05, the Company opted for IS-95A, V-5.2 and MSC based 2000-1X WLL CDMA technologies as well as CorDect WLL technology. The advanced third Generation (3G) CDMA 2000-1X technology based commercial system developed by SK Telecom (Korea) was launched in October 2000 and available in the global market since then. Even the Management Committee of the Board of Directors of the Company had observed (March 2002) that V 5.2 CDMA technology was an outdated one and that the MSC based solution using International Operating Standards (IOS) was the latest technology for CDMA WLL systems which could be upgraded to the CDMA 2000 1X 3G version. The Committee further observed that the MSC based CDMA 2000-1X technology was expected to be cheaper on per line cost basis due to its higher capacity and as such the Company should go in for this technology.

It was however observed that the Company procured WLL systems worth Rs 1,479.87 crore during the period October 2000 to March 2005 based on tenders floated for obsolete technologies. Out of these procurements, WLL systems worth Rs 1,158.25 crore were procured even after the above-mentioned observations of the Management Committee. The details are given at Appendix-III. The tender for procuring WLL equipment based on CDMA 2000-1X technology was floated (July 2002) but the purchase order was placed in only March 2004. WLL systems worth Rs 243.26 crore were procured (March 2005) based on this tender and a further tender of July 2004.

The reply of the Company was awaited as of January 2006.

1.9.3 Non-analysis of financial viability and profitability

While planning for launching and expansion of the WLL telephone service for the years 2000-01 and 2001-02, no analysis of the financial viability and profitability of the project was done by the Company on the ground that the project had been taken up on the basis of a Cabinet decision, which reflected the social commitment of the Government. The contention was unacceptable, as the analysis would have helped the Company to assess the quantum of losses likely to be suffered for carrying out this social commitment of the Government so that the same could be subsidized from the USO Fund^Ω. It was noticed that the Company did the analysis in 2002-03 and 2004-05, but

^Ω USO Fund: A fund created (December 2003) by the Government under DoT for subsidizing the expenditure incurred by the telecom operators for providing telecom services under Universal Service Obligations.

not in 2003-04. It was also seen that the corporate office had not compiled separate year-wise details of the total revenue billed and collected and the profit and loss account pertaining to the WLL telephone service for any of the years from 2000-01 to 2004-05. In the absence of these details, it was not possible to accurately assess the remunerativeness of its WLL telephone service.

The corporate office issued (March 2003 and May, June and October 2004) instructions to all the circles to prepare separate costing records for the WLL telephone service but 13 circles[‡] and the two metro districts did not prepare these records. Eleven circles prepared these records only for the year 2003-04 and of these seven circles viz., Andhra Pradesh, Bihar, Haryana, J&K, Karnataka, Kerala and UP (East), had sustained a total loss of Rs 122.15 crore and one Circle (Madhya Pradesh) had earned a profit of Rs 54.68 lakh during the year 2003-04 on operation of the WLL telephone service, as detailed in Appendix-IV. Three circles viz., Himachal Pradesh, Maharashtra and UP (West) did not prepare complete records.

The circles were also required to prepare yearly revenue projections based on the expected number of connections and average revenue per user and compare the same with the actual revenue realisation. Test checks in 10 circles, viz., Assam, Chhattisgarh, Haryana, Jharkhand, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan and UP (East), revealed that there was a total shortfall of Rs 139.31 crore in revenue realisation vis-à-vis the projections during 2001-02 to 2004-05. The details are given at Appendix-V. The shortfall was mainly because of poor capacity utilisation and problems of network coverage, as discussed later. It was noticed that other circles did not prepare the revenue projections in respect of the WLL telephone service.

1.9.4 Non formulation of strategies for launching and marketing

Strategies for launching and marketing of the WLL service had not been formulated either at the initial planning stage or during its subsequent expansions. A Media Plan prepared by the Company (2004-05), incorporating the advertising and marketing strategies for various services did not indicate specifically any plan for the WLL telephone service. Since launching (January 2001), the marketing wing of the corporate office of the Company had incurred (2002-03) Rs 61,000 on printing of 20,000 brochures and Rs 21.44 lakh on newspaper advertisements (2003-04). No budget was exclusively allotted for marketing the WLL service. In comparison, the Company spent Rs 14.25 crore on promotion and marketing of its CMTS up to March 2005 though an investment of Rs 4,967.91 crore (including terminals) was made in the WLL telephone service as against investment of Rs 5657.06 crore made in CMTS upto March 2005.

[‡] Andaman and Nicobar, Assam, Chhattisgarh, Gujarat, Jharkhand, North East-I, North East-II, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttaranchal and West Bengal

RECOMMENDATIONS

- **The Company should conduct surveys and identify areas based on population and trade statistics and existing trends of demand for forecasting demand and requirements.**
- **The Company should consider unutilized capacities, presence of other private operators and envisaged growth of its own landline and cellular mobile telephone services while forecasting demand and requirements.**
- **The Company should exercise extreme caution while selecting technology for its various telecom services to avoid the risk of selection of obsolete technology.**
- **The Company should carry out the profitability analysis of each expansion project and ascertain the remunerativeness of the WLL telephone service.**
- **The Company should ensure preparation of separate costing records relating to the WLL telephone service by each Circle to ascertain the Circle-wise operational and financial viability of the service.**
- **The Company should prepare Circle-wise revenue projections for the WLL telephone service.**
- **The Company should formulate appropriate marketing strategies for promotion of the WLL service both in urban and rural areas.**

1.10 INFRASTRUCTURE

With a view to avoiding delays in commissioning of the WLL systems, the corporate office issued (May 2000 to December 2003) instructions to the circles to keep the infrastructure ready in advance and reiterated these instructions from time to time. It was however, observed 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 as discussed below in installation and commissioning of WLL systems at many places.

1.10.1 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 delays in installation and commissioning of the WLL telephone system as discussed below:

- The Company was to procure MSC based WLL CDMA equipment of 3.72 lakh lines from M/s United Telecommunications Limited (UTL) by November 2004 as per terms and conditions of the purchase order of March 2004. Due to non-availability of the necessary infrastructure such as sites, towers and power supply at 44 BTS sites in the Kerala,

Karnataka, Maharashtra, Tamil Nadu and West Bengal circles, the WLL equipment could not be installed up to March 2005. Further, power supply at Ghaziabad and Kolkata and National Internet Backbone (NIB) connectivity at Ghaziabad, Kolkata, Madurai and Nagpur were not provided up to March 2005, which also delayed installation and commissioning.

- A purchase order for 1.05 lakh lines of CDMA WLL equipment was placed (January 2003) on M/s Icomm Telecommunication Limited. There were delays in commissioning of the equipment, as the towers were not ready at two BSC sites in the Chhattisgarh Circle, one BSC site in the Haryana Circle and two BSC sites in the Rajasthan Circle.
- In respect of 3.52 lakh lines of WLL CDMA equipment ordered (July and September 2002) on M/s LG Electronics, 18 sites and towers at 37 sites were not ready for about six months in the Bihar, Haryana, Karnataka, Kerala, Madhya Pradesh, Punjab, Rajasthan and Uttar Pradesh (West) circles.
- In respect of 0.60 lakh lines of WLL equipment supplied (January-March 2003) by HFCL, it was observed that the towers at one site each in the Maharashtra and Kerala circles were not ready in time, resulting in delays of seven months in radio frequency optimization.
- The Gujarat Circle received WLL CorDect equipment for 0.30 lakh lines in February - March 2004 for installation at 188 locations but due to delays in procurement of tower material, the installation of the same at 79 locations was delayed by more than six months.
- At Mahmoodabad SDCA under the Mau SSA in the Uttar Pradesh (East) Circle, though the BTS was installed in March 2004, the WLL system could not be commissioned till February 2005 due to non-availability of the required power supply.

On these being pointed out, the Management stated (August 2005) that the circles were advised to keep the infrastructure ready at the time of allotment of the WLL equipment to them. They further stated that the micro level monitoring of infrastructure work, installation and commissioning of the equipment was done at the Circle level and the corporate office monitored the overall network switching and commissioning (NSC) targets given to the circles on a monthly basis. The reply is not acceptable since due to inadequate monitoring at the corporate office as well as Circle office, there were delays in installation and commissioning of WLL services.

1.10.2 Commencement of operations without requisite 'Agreement in Principle' from the Wireless Planning and Coordination Wing

Telecom operators have to obtain licence from the Wireless Planning and Coordination (WPC) Wing of DoT for allocation of frequencies for establishment and operation of wireless equipment. Based on the requests from the operators, the WPC Wing allocates frequencies and issues 'Agreements in Principle' for use of the allocated frequencies by the operators.

The Company allotted (2002-03), CorDect WLL systems of 5.77 lakh lines to 13 circles⁷ and two metro districts at Calcutta and Chennai. It was noticed that the 'Agreements in Principle' for the requisite frequencies were received from the WPC Wing only in respect of eight circles^{*} up to December 2004/July 2005. In respect of the remaining five circles and two metro districts, though the 'Agreements in Principle' had not been received (August 2005) from the WPC Wing, the systems were being operated, which violated the conditions of obtaining the licence for use of frequencies.

It was also noticed that detailed records in respect of Circle-wise and site-wise frequency allocations from WPC for the years 2000-01 to 2004-05 were not maintained at the corporate office.

1.10.3 Non-obtaining of SACFA[↓] clearances for sites

Telecom operators also have to seek clearances for the sites where they intend to install wireless equipment from SACFA. SACFA has to give these site clearances within a period of two to six months from the dates of receipt of the applications.

A test check of records of 19 circles and one metro district revealed that out of 2,729 sites for which SACFA clearance had been sought, clearances for only 1,399 sites had been received till June 2005 while clearances for the balance 1,330 sites were still pending (March-September 2005) as detailed in Appendix-VI.

The Management stated (June 2005) that letters regarding site clearance were directly issued to the concerned circles by WPC due to which the status of clearance of sites was not available in corporate office. On this being pointed out, the local managements stated (May-September 2005) that there were considerable delays in receiving clearances from the WPC wing and SACFA in spite of clear instructions from DoT

RECOMMENDATIONS:

- **The Company should prescribe in advance the time schedules for the various activities to be undertaken by circles for creation of necessary infrastructure.**
- **The Company should devise a monitoring mechanism for ensuring timely receipt of 'Agreements in Principle' from the WPC wing for use of allotted frequencies and clearances of SACFA for sites for installation of wireless equipment.**

⁷ Chhattishgarh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, UP (East), UP (West), West Bengal.

^{*} Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Tamil Nadu

[↓] SACFA: '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.

- **DOT should ensure timely issue of 'Agreements in Principle' for use of allotted frequencies by the WPC wing and site clearances by SACFA.**

1.11 PROCUREMENT

The Company during 2000-01 to 2004-05, placed purchase orders worth Rs 4,967.91 crore for procurement of WLL systems on turnkey basis. These systems included equipment for 40.99 lakh lines, besides 18.66 lakh FWTs and 9.73 lakh HHTs as detailed in Appendix-III.

The Company upto June 2003 procured equipment and material either through DGS&D[®] or by calling limited tenders (when the cost of material to be procured was less than Rs 2.00 lakh) or through open tenders (when the cost of material to be procured was more than Rs 2.00 lakh). The Company brought out (June 2003) its own Manual for Procurement of Telecom Equipment and Stores.

Audit noticed various deficiencies related to procurement of WLL equipment, which are discussed in the succeeding paragraphs.

1.11.1 Inadequate procurement planning

The procurement of inter-related equipment should be properly planned and their receipt synchronized in such a way that there are no shortages or excesses of any particular item. Besides, customers' demands and preferences as well as the latest developments in the configuration of terminals should be considered during the procurements. Audit noticed the following deficiencies in procurement planning of WLL equipment and terminals:

1.11.1.1 Delay in procurement of V 5.2 connecting interface equipment

The capacities of the existing WLL systems at Barabanki, Fatehpur, Haidergarh and R.S. Ghat in the Barabanki SSA under the UP (East) Circle were to be expanded by 500 lines each and one WLL CorDect system of 1,000 lines was to be set up at Barabanki for clearing the waiting lists in TNF areas. Audit noticed that although the installation work at all the above sites and those for the WLL CorDect system were completed during January and December 2004, respectively, the systems could not be commissioned till date (July 2005) due to non availability of V 5.2 connecting interface equipment. This resulted in the waiting list not being cleared and consequent loss of potential revenue of Rs 49.50 lakh[♦]. The Divisional Engineer stated (September 2005) that the equipment was still to be received against the purchase order placed on the vendor by the Circle Office.

1.11.1.2 Infructuous investment on purchase of terminals

A review of records of 17 circles and two metro districts revealed that 3,40,380 HHTs, 40660 FWTs, 8,975 Fixed Remote Stations (FRS) and 8200

[®] DGS&D: Director General of Supplies and Disposals

[♦] calculated by multiplying the capacity with rent per month per connection

Wall sets valued at Rs 229 crore, purchased during January 2003 to December 2004, were lying idle in various circles as of August 2005 as detailed in Appendix-VII. The local managements stated that customers disliked these HHTs due to their bulky size, problems with network coverage, batteries and limited mobility. It was also noticed that FWTs, FRS and Wall sets were lying idle, as there was no demand for them. Thus procurement of terminals without keeping the customers' preferences in view resulted in infructuous investment of Rs 229 crore.

1.11.1.3 Excess procurement of power plants and batteries

Scrutiny of records in 12 SSAs under the Kerala, Madhya Pradesh, Orissa, Punjab and Tamil Nadu circles and the Chennai Telephones District revealed that additional power plants and batteries were procured during 2001-02 to 2003-04 amounting to Rs 3.26 crore, without assessing the actual requirements. These were lying idle since procurement as the existing power plants and batteries were sufficient to cater to the need, resulting in blocking of funds to the tune of Rs 3.26 crore. The local managements accepted the facts and stated that these power plants and batteries would be used in future expansion programmes.

1.11.2 Excess payments due to delay in finalisation of rates

The corporate office places the purchase orders for WLL equipment and terminals and the respective circles that receive the delivery, release the payment to suppliers.

Audit noticed that the Company placed purchase orders on M/s ARM Limited, Hyderabad in September 2002 and on M/s United Telecom Limited (UTL), Bangalore in November 2002 for supply of 28,500 and 34,000 numbers of WLL CDMA FWTs, respectively, at provisional rates. The provisional unit rate for FWT without Patch Panel Antennae (PPA)[§] was Rs 7,453 and for FWT with PPA was Rs 8,092. These rates were firmed up (December 2002) by the corporate office as Rs 8,281 for FWT without PPA and Rs 8,971 for FWT with PPA and communicated to the concerned Circle in the same month. The scheduled delivery periods for the purchase orders were up to 8 January 2003 in respect of M/s ARM Limited and up to 28 February 2003 in respect of M/s UTL.

The corporate office (November 2004) made a downward revision of these firm rates to Rs 5,959 for FWT without PPA and Rs 6,648 for FWT with PPA for the supplies made after the scheduled delivery periods and intimated (November 2004) the same to the concerned circles. It was noticed that there was a delay of about two years in finalising the rates from the date of placement of the purchase orders.

The suppliers made delivery during the period 18 January 2003 to 30 July 2003. However, against the supplies, all the concerned SSAs and the Chennai

[§] Patch Panel Antennae: are designed to optimize the transmission and reception of signals between the base transceiver station and FWT.

Telephones District released payments at the rates communicated by the corporate office in December 2002. Thus due to delayed finalisation of the rates by the corporate office in November 2004, the circles released the excess payments of Rs 5.59 crore to the suppliers. The local managements accepted (June/July 2005) the facts.

1.11.3 Inadequate financial safeguards

In order to ensure satisfactory performance of equipment and stores, prescribed securities in the shape of performance bank guarantees (PBGs) were obtained from suppliers before placement of formal purchase orders. The following deficiencies were noticed in obtaining the PBGs from the suppliers:

1.11.3.1 Short obtaining or non obtaining of additional performance bank guarantees from the suppliers

The Company's manual of procurement of telecom equipment and stores *Addendum-I* (July 2003) provides for an additional PBG at the rate of five *per cent* of the value of the remaining quantity to be supplied during the extended delivery period from the supplier. According to purchase orders (December 2004), M/s Tera Com and M/s HECL were to make bulk supplies of FWTs up to 10 July 2005 valued at Rs 142.60 crore and Rs 71.30 crore respectively. M/s Tera Com and M/s HECL did not supply FWTs valued at Rs 75.57 crore and Rs 64.56 crore within the scheduled delivery period which required submission of additional PBGs of Rs 3.78 crore and Rs 3.23 crore respectively before granting extensions. It was however noticed that the Company directed M/s Tera Com and M/s HECL to furnish additional PBGs for only Rs 1.99 crore and Rs 2.53 crore respectively. Thus additional PBGs amounting to Rs 2.49 crore were short realized from these suppliers.

Similarly, M/s ITI was to make bulk supplies of 4.50 lakh FWTs valued at Rs 183.02 crore and 33,137 FWTs valued at Rs 14.97 crore against purchase orders of November and December 2004 with scheduled delivery periods up to 4 April 2005 and 1 May 2005 respectively. M/s ITI did not supply any FWTs within the scheduled delivery periods.

According to the provisions of the Manual and the terms and conditions of the purchase orders, M/s ITI was to furnish initial PBGs in the form of corporate guarantee amounting to Rs 9.90 crore and additional PBGs of Rs 9.90 crore. The Company neither recovered the initial corporate guarantee nor the additional PBGs before granting extensions to the original delivery schedule up to 30 June 2005 and 31 July 2005. The Company short closed (August 2005) both the purchase orders as M/s ITI could supply only 1.18 lakh FWTs during the extended delivery period against the purchase order of November 2004 and could not supply any FWTs against the purchase order of December 2004. The Company directed (August 2005) M/s ITI to pay the amount of PBGs, which had not been received till date (October 2005).

1.11.3.2 Premature release of additional bank guarantee

According to the general conditions of the contract, 100 *per cent* payment could be made against supplies after delivery, provided an additional bank guarantee for an amount equivalent to five *per cent* of the value of supplies, valid for a minimum period of seven months, was furnished by the supplier along with an undertaking that the equipment supplied would be free from damages and shortages. The additional bank guarantee was to be released only after cases of damages or shortages, if any, in the supplies were settled.

The Company issued (January 2001) a purchase order on M/s HFCL for supply of WLL systems for 49,000 lines along with FRS to three circles, viz., Assam, Himachal Pradesh and Orissa. It was observed in the Orissa Circle that M/s HFCL had furnished an additional bank guarantee of Rs 4.11 crore covering a period of six months (24 January 2002 to 23 July 2002) instead of 7 months as required. Besides, M/s HFCL also did not furnish any undertaking that the WLL systems supplied would be free from damages and shortages. During the validity of this additional bank guarantee, complaints were received by the Orissa Circle from its field units regarding defective FRS, BTSs and BSCs and malfunctioning of the system leading to disconnection of calls, failures in call processing, network coverage problem and poor signals etc. Despite the fact that M/s HFCL did not rectify the complaints the Orissa Circle released the additional bank guarantee of Rs 4.11 crore after six months.

1.11.4 Release of purchase orders with deficient terms and conditions

The Company's manual for procurement of telecom equipment and stores did not specify any specific terms and conditions for levy of penalty on suppliers for delays in installation, acceptance testing and commissioning of the projects to be executed on turnkey basis.

According to the terms and conditions of the purchase orders, acceptance testing (A/T) of WLL equipment was to be got done by the suppliers from the Technical and Development (T&D) Circle of the Company before their commissioning. Further, according to instructions (February 2003) payments for installation and commissioning of equipment were to be made after satisfactory completion of the A/T by the T&D Circle.

Audit observed that due to non-inclusion of any clause for levy of penalty on the suppliers for delays in installation, A/T and commissioning of the WLL equipment, the Management could not levy any penalty on the defaulting suppliers for delays in these activities as discussed below.

- M/s LG Electronics delayed the commissioning of WLL equipment installed in the Punjab Circle by seven to 15 months, as it could not get the A/T certificate from the T&D Circle of the Company due to poor coverage and other defects. This resulted in blocking of capital amounting to Rs 26.65 crore. No penalty was levied on the supplier for these delays.

- At Panjim SSA under the Maharashtra Circle, the WLL equipment supplied (December 2002) by M/s LG Electronics could not be commissioned up to May 2005 due to a number of deficiencies being pointed out by the T&D Circle such as poor quality of calls, discrepancies in meter reading and switching delays. This resulted in blocking of capital of Rs 2.62 crore. No penalty was levied on the supplier for these delays.
- Under eight circles[#] and the Calcutta Telephones District, 40 BSCs and 489 BTS were allowed by the Company to be put to commercial use by the suppliers without satisfactory completion of A/T, as detailed in Appendix-VIII. In UP (East) Circle, it was noticed that full payment of Rs 2.52 crore was released by the Circle to M/s LG Electronics towards installation, commissioning and A/T charges on the basis of a provisional A/T certificate, which was irregular. No penalty was levied on the supplier for not getting A/T cleared.
- In 16 SSAs of seven circles[§], Audit observed that out of 30 WLL systems received during August 2001 to August 2004, 29 systems were commissioned after a delay of two to 19 months. One system had been commissioned provisionally without formal A/T till August 2005 despite the lapse of 28 months. This resulted in blocking of funds aggregating Rs 103.18 crore for periods ranging between two to 28 months as detailed in Appendix-IX. No penalty was however levied on M/s HFCL, M/s LG Electronics, M/s ARM, M/s UTL and M/s ITI for delays in commissioning of the WLL systems.

1.11.5 Non-compliance to terms and conditions on releasing payments

The Management should have ensured that the terms and conditions of the purchase orders and the conditions for granting extensions in delivery schedules were scrupulously adhered to by the circles while releasing payments to safeguard the Company's interest. Some circles failed to adhere to the terms and conditions of the purchase orders while releasing the payments to the suppliers as discussed below.

1.11.5.1 Excess payment due to non-application of subsequent tender rate

Against a tender issued in June 2001, the corporate office placed (July 2002) a purchase order on M/s. HFCL for supply of WLL CDMA equipment for 60,000 lines, out of which, the allotment of equipment for the Tamil Nadu Circle was for 15,000 lines. M/s HFCL failed to supply the complete equipment within the scheduled delivery date (23 January 2003), the corporate office allowed (February 2003) extension up to 30 April 2003 subject to the condition that the payments for the supplies received during the extended delivery period would be made at the lowest of the following rates:

[#] Bihar, Chhattisgarh, Jharkhand, Kerala, Madhya Pradesh, Orissa, UP (East) and Uttaranchal
[§] Himachal Pradesh, J&K, Punjab, Haryana, Maharashtra, Rajasthan and UP (East).

- rate given in the purchase order,
- revised rate which was to be finalised after applying the impact of the Union Budget on the original rate from the date of opening of the tender up to the date of receipt of supplies,
- rate obtained in another tender which was issued in May 2002 for procurement of WLL CDMA equipment.

M/s HFCL supplied WLL CDMA equipment for 10,000 lines to the Coimbatore SSA in February 2003 and for 5,000 lines to the Trichy SSA of the Tamil Nadu Circle in March 2003.

It was noticed that the rate obtained for WLL CDMA equipment against the tender of May 2002 was the lowest amongst the above-mentioned criteria. Thus for the supplies received during the extended delivery period, the rate obtained in the above tender was to be applied. However, Coimbatore and Trichy SSAs released the payment at the original rate given in the purchase order, which resulted in excess payment of Rs 5.45 crore to M/s HFCL.

1.11.5.2 Payment of sales tax in excess of the prescribed percentage

According to instructions (October 2000) of corporate office, no additional sales tax over and above the four *per cent* sales tax already included in the 'all-inclusive prices' was to be paid to the suppliers for supplies within the same state.

It was noticed that the UP (West) Circle made payments (December 2002 and November 2004) aggregating Rs 2.47 crore to M/s LG Electronics towards sales tax over and above the four *per cent* tax for intra state supplies against two purchase orders of January and April 2001. No action for recovery of this amount was taken either by the Circle or the corporate office till the matter was pointed out by Audit in August 2005.

The Management stated (October 2005) that M/s LG Electronics had been requested (September 2005) to deposit Rs 2.47 crore which was erroneously paid to them. Recovery details were however awaited (November 2005).

1.11.5.3 Non-recovery of liquidated damages for delayed deliveries

Purchase orders for WLL projects issued by the corporate office specifically provided for levy of liquidated damage (LD) charges on the suppliers in cases of delays in delivery of WLL equipment. Audit observed that in 34 cases in nine circles[↓] and the Chennai Telephones District, LD charges were either not levied or short levied on the defaulting suppliers despite non delivery and delayed delivery of WLL equipment and terminals by them. Consequently, the Company had to incur a loss of Rs 11.97 crore due to non-levy and short levy of LD charges on the defaulting suppliers as detailed in Appendix-X.

[↓] Assam, Bihar, Gujarat, Haryana, Jharkhand, Maharashtra, Orissa, Punjab and Tamil Nadu.

RECOMMENDATIONS

- **The Company should ensure simultaneous receipt of WLL equipment and terminals to avoid the risk of delays in release of connections and under-utilisation of capacity due to shortages of terminals.**
- **The Company should procure WLL terminals keeping in view the customers' preferences and demands as well as the latest technological advancements to avoid the risk of obsolescence and idling of terminals due to lack of demand.**
- **The Company should ensure procurement of power plants, batteries and other accessories based on actual requirement to avoid the risk of unnecessary blocking of funds.**
- **The Company should ensure timely finalisation of firm rates for supplies to avoid the risk of wrong or excess payments to the suppliers.**
- **The Company should ensure obtaining of proper performance bank guarantees from suppliers to safeguard its financial interest.**
- **The Company should monitor the compliance of the terms and conditions of the purchase orders by its circles to avoid the risk of irregular payments.**
- **The Company should monitor the levy of prescribed liquidated damage charges by the circles on the suppliers to protect its financial interests.**

1.12 UTILISATION OF EQUIPPED CAPACITY

In order to ensure proper returns on the investment made in a project, it is imperative that the equipped capacity of the project is optimally utilised and all prescribed targets for capacity utilisation are met.

The overall utilization of the equipped capacity of 26.89 lakh lines of WLL systems of the Company as of March 2005 was only 16.28 lakh lines i.e. 60.53 *per cent*. Against the equipped capacity of 16.90 lakh lines in the rural areas and 9.99 lakh lines in the urban areas, the capacity utilisation was only 11.32 lakh lines (67 *per cent*) and 4.96 lakh lines (49.6 *per cent*) respectively. The capacity utilisation in different circles and Metro districts ranged between 35.20 *per cent* (Andaman and Nicobar Circle) and 90.07 *per cent* (Madhya Pradesh). The details are given at Appendix-XI.

The capacity utilization was below 50 *per cent* in the rural areas of three circles, viz., Andaman and Nicobar, Karnataka and Uttar Pradesh (East) and in the urban areas of 10 circles, viz., Andhra Pradesh, Gujarat, Himachal Pradesh, Jharkhand, Kerala, Orissa, Punjab, Tamil Nadu, Uttaranchal and Uttar Pradesh (East) circles. The capacity utilisation was more than 100 *per cent* in the urban areas of five circles, viz., Assam, Jammu and Kashmir, Karnataka, North-East-I and West Bengal.

Audit observed that utilisation of the equipped capacity of the WLL systems remained largely unsatisfactory mainly due to deficiencies in planning and procurement, as discussed in paragraphs 1.9 and 1.11 earlier. Besides, poor network coverage and quality of service also contributed to low capacity utilisation, as discussed subsequently in paragraphs 1.13 and 1.15.

RECOMMENDATION

- **The Company should prepare appropriate strategies for ensuring optimum utilisation of the equipped capacity of its WLL systems.**

1.13 OPERATIONAL PERFORMANCE

1.13.1 Achievement of targets

As mentioned earlier in paragraph 1.1s, the USO under NTP 1999 envisaged providing telephones on demand, besides telephone coverage of all the villages in the country by the end of the year 2002. For this purpose, subsidy was to be paid to the operators from the USO Fund to compensate for the losses incurred in providing telephones in the villages. Based on these obligations, DoT decided (August 2000) to replace all faulty irreparable VPTs working on the MARR system by the WLL system by the end of 2002 and to provide new VPTs only through WLL. Audit observed that the Company failed to achieve the targets fixed in its annual plans for replacement of MARR VPTs and for installation of new WLL VPTs as well as providing of VPTs in villages according to the agreement (November 2004) with USO Fund as discussed in the succeeding paragraphs.

1.13.1.1 Non-achievement of targets for replacement of faulty MARR VPTs

The annual plan targets of replacement of faulty MARR VPTs by WLL systems were 40,000, 80,000 and 64,424 for the years 2002-03, 2003-04 and 2004-05 against which the Company replaced 43,430 (109 *per cent*), 36,049 (45 *per cent*) and 28973 (45 *per cent*) MARR VPTs respectively. The Management stated (August 2005) that the targets had been fixed in anticipation of the availability of WLL equipment but equipment could not be made available and that the initial procurement of equipment was not sufficient for covering even 50 *per cent* of the 2,642 SDCAs of the country. They also stated that MARR VPTs were scattered throughout the length and breadth of the country including remote and far-flung areas. The reply was not acceptable, as these aspects should have been addressed adequately at the time of finalising the targets.

1.13.1.2 Non-achievement of targets for installation of new VPTs

In the annual plans, the targets fixed for installation of new VPTs were 144771, 39439, 7135 and 8061 for 2001-02, 2002-03, 2003-04 and 2004-05 against which the achievement was 70755, 36929, 4737 and 9310 respectively. There were shortfalls in achievement of targets by 51 *per cent*, 6 *per cent* and 34 *per cent* during 2001-02, 2002-03 and 2003-04, respectively.

The Management stated that the targets could not be achieved due to delay in supply of equipment by the suppliers and shortage of FWTs besides local problems in certain areas such as insurgency.

1.13.1.3 Non-achievement of USO Fund targets for providing VPTs

The Company signed (November, 2004) an agreement with the USO Fund for providing VPTs to 66,822 villages in 14 circles*. According to the terms and conditions of the agreement, at least 20 *per cent* of the VPTs were to be provided by these circles within one year from the date of agreement, a minimum 60 *per cent* by the end of the second year and the remaining by the end of the third year. It was noticed that a total of 14,233 VPTs (21 *per cent*) were provided during the first year ended during October 2005.

There was overall achievement of the first year target. However, it was observed that only six circles viz., Assam, Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra and Rajasthan could achieve their individual targets but eight circles, viz., Andhra Pradesh, Chhattisgarh, Jammu and Kashmir, Jharkhand, Orissa, NE-I, NE-II and Uttaranchal failed to achieve the same. The shortfall in achievements of the first year target by these eight circles was 3.2 *per cent*, 31.15 *per cent*, 39.65 *per cent*, 91.15 *per cent*, 100 *per cent*, 81.90 *per cent*, 90.35 *per cent* and 74.50 *per cent*, respectively.

1.13.2 Optimal operational performance

Optimal operational performances of the WLL telephone service depended upon good network coverage and uninterrupted functioning of the system. To ensure this, WLL equipment should have been constantly covered either by warranty or by annual maintenance contracts (AMCs).

Audit observed that the Purchase orders were deficient as it did not contain any specific penalty clause in case of poor network coverage of the equipments supplied by the suppliers. Following deficiencies were noticed in the operational performance of the WLL telephone service.

1.13.2.1 Inadequate network coverage

According to the terms and conditions of the purchase orders for procurement of WLL systems, it was the responsibility of the suppliers to ensure the good network coverage. Audit observed instances of failure of suppliers to discharge their responsibilities and inadequate monitoring by the Company, resulting in poor network coverage. The instances are discussed below.

The corporate office placed (July 2002) two purchase orders on M/s HFCL for supply of WLL CDMA equipment for 1.48 lakh lines for deployment in 21 cities. Similarly, two purchase orders were placed (July/September 2002) on M/s LG Electronics for supply of WLL CDMA equipment for 3.52 lakh lines for deployment in 59 cities. The suppliers were directed to obtain satisfactory performance reports for each city from the concerned CGMs.

* Andhra Pradesh, Assam, Chhattisgarh, Gujarat, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Madhya Pradesh, Maharashtra, NE-I, NE-II, Orissa, Rajasthan and Uttaranchal.

Audit scrutiny revealed that the commissioning of the WLL CDMA equipment was delayed in many of these cases due to inadequate network coverage. Despite repeated requests of the Company, the suppliers did not take appropriate action to improve the network coverage. CMD of the Company observed (March 2004) that due to poor network coverage, the Company could not optimally utilize the WLL systems and that customers were complaining about the performance of these systems. Though both the suppliers were given extensions up to 15 September 2004 to meet the coverage requirement by installing additional BTS and repeaters, they failed to fulfill their commitment of providing the requisite network coverage as of August 2005.

The Management stated (August 2005) that a High Powered Committee had been formed for settling the long pending issues relating to non-compliance of the terms and conditions by M/s HFCL and M/s LG Electronics and that the case was under examination of the Committee.

A further test check in 16 SSAs of eight circles[@] revealed that due to poor radio frequency coverage of the systems, under-utilization of capacity of the WLL systems ranged between 26 per cent and 100 per cent, resulting in idling of the investment of Rs 78.74 crore as detailed in Appendix-XII.

1.13.2.2 Unsatisfactory response of suppliers in attending to complaints regarding network coverage

The tender conditions for supplies of WLL equipment stipulated that support for radio frequency planning, optimization and tuning after commissioning, whenever needed, during warranty and AMC periods was to be provided by the suppliers free of charge. Further, during the period of AMC, the suppliers were to diagnose faults and rectify the same, besides carrying out periodic preventive maintenance.

Scrutiny (August 2005) of the relevant records revealed that M/s LG Electronics did not attend to the complaints pertaining to network coverage and other deficiencies as detailed below:

- The Ahmedabad SSA under the Gujarat Circle reported (July 2002) to the Circle Office and to the corporate office that the WLL switch could not be commissioned as the defects which were pointed out during acceptance testing were not rectified by M/s LG Electronics. It also reported that M/s LG Electronics had been delaying the return of faulty terminals after repairs on the ground that a 'taking over certificate' should first be released to them. The SSA further reported that during the last one and a half years, i.e. January 2001 to June 2002, 939 HHTs, 173 FWTs and 100 batteries supplied by M/s LG Electronics had become faulty due to poor quality.
- The Haryana Circle reported (November 2003-January 2004) to the corporate office that M/s LG Electronics had not attended to problems

[@] Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Kerala, Madhya Pradesh, Maharashtra and UP (East).

relating to repairs of FWTs and FWT cards in Ambala SSA despite repeated requests.

- The Rajasthan Circle reported (March 2004) to the corporate office that in the Ajmer, Beawar, Jaipur and Jodhpur SSAs, the WLL telephone service was very poor and unsatisfactory due to non-rectification of regular radio frequency optimization by M/s LG Electronics which led to frequent call drops; frequent faults in modules due to unreliable power plants and non-rectification of defects pointed out by the T&D Circle during acceptance testing.

Further scrutiny of the records in various circles revealed that various field units of 19 circles[£] and the Calcutta and Chennai Telephones Districts reported to their concerned Circle offices regarding problems related to WLL equipment and terminals such as poor coverage, very low signals or no signals during peak hours, call dropping, frequency overlapping, system failures and repairs and maintenance. These units also reported that the suppliers had not attended to these complaints despite repeated requests.

The local managements accepted the above facts.

1.13.2.3 Non-rectification of faults of the WLL system within the warranty period

Review of records of two SSAs in the Assam and Jharkhand circles revealed that faults had been noticed in the system within warranty periods but the same had not been attended to by the suppliers. In Tejpur SSA under the Assam Circle, the BSC capacity was expanded (November 2003) from 5,000 lines to 10,000 lines, but the software capacity was not similarly expanded. The matter was brought to the notice of the supplier (M/s HFCL) but the problem was not rectified within the warranty period. Similarly in Ranchi SSAs under the Jharkhand Circle, the faults brought (July 2002) to the notice of the supplier (M/s ITI) were not rectified till August 2005.

1.13.3 Non-execution of Annual Maintenance Contracts for WLL terminals due to delay in finalisation of the guidelines

According to the provision of bid documents, Annual Maintenance Contracts (AMCs) for the maintenance of the WLL terminals were to be signed by the circles with the concerned suppliers at the end of the warranty period. Audit scrutiny revealed that against tender enquiries of October 2001 and August 2002, 13 purchase orders were issued (between September 2002 and March 2004) for supply of WLL terminals to different suppliers viz., M/s HFCL, ARM Limited, LG Electronics, and XL Limited. The consignments were received between January 2003 and June 2004 and the one-year warranty period was to expire between January 2004 and June 2005 for these purchase orders.

[£] Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Haryana, J&K, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, UP (East), UP (West), Uttaranchal and West Bengal.

The bid documents and the purchase orders contained the terms and conditions and the rates to be paid to the suppliers for AMC periods. However, the corporate office prepared fresh terms and conditions for AMCs with a view to make them clearer and to further negotiate the rates. The same were circulated (March 2005) to these suppliers for acceptance with the condition that the rates for AMCs would be negotiated with reference to the rates obtained for AMCs against the tender issued on 15 July 2004. None of the suppliers except M/s XL Limited accepted this condition. A Committee constituted (May 2005) by the corporate office recommended that an AMC should be signed only with M/s XL Limited. Further, the corporate office also instructed (June 2005) all the circles not to sign AMCs with the other suppliers till the AMC guidelines were finalized. Thus due to abnormal delay in finalization of the AMC guidelines, AMCs could not be signed with any of the other suppliers till date (November 2005).

Scrutiny of the records of various circles revealed that 55,475 defective WLL terminals valued at Rs 47.95 crore were lying in various SSAs under 16 circles as detailed in Appendix-XIII. The suppliers due to non-execution of AMCs had not repaired these terminals. As a result the entire investment of Rs 47.95 crore in these WLL terminals was rendered un-remunerative till date.

It was also noticed that in the UP (east), Rajasthan and Bihar circles that 7,161 FWTs valued at Rs 6.78 crore which had been sent for repairs to the suppliers had not been returned although a period of more than six months had elapsed from the date of sending. No penalty could be levied on the suppliers due to non-execution of AMCs.

1.13.4 Non recovery of FWT and HHT sets from customers after closure

Rules provide that for closure of connections, closing advice note should be issued by the Commercial branch and forwarded to the concerned Sub-Divisional Engineers for closure of telephone connections and recovery of instruments (FWTs or HHTs) from the customers. A scrutiny of the records of 51 SSAs under 16 circles and the Calcutta Telephones District revealed that 16,712 FWTs and 20,590 HHTs valued at Rs 25.94 crore were not recovered from the customers after closure of their WLL connections as of August 2005 detailed in Appendix-XIV.

RECOMMENDATIONS

- **The Company should monitor the performance of the suppliers in carrying out their responsibility towards providing adequate and uninterrupted network coverage to avoid the risk of poor quality of service and losing its customer base.**
- **The Company should finalise the guidelines for execution of AMCs for WLL terminals urgently to avoid the risk of delays in repairs and accumulation of inventories of faulty terminals.**

- **The Company should ensure timely return of WLL terminals from vendors after their repairs.**

1.14 SYSTEM OF BILLING, COLLECTION AND ACCOUNTING OF REVENUE

Billing, collection and accounting of revenue in respect of all the telephone services of the Company were done by the Telephone Revenue Accounting (TRA) Branch in each SSA. The functions of the TRA Branch were computerized and mainly two types of software viz., 'DOTSOFT' and 'TRICHUR' were used for the purpose.

An efficient and effective system of billing, collection and accounting of telephone revenue would be based on the following:

- timely receipt of advice notes from the commercial wing after completion of activities relating to opening, shifting and closure of connections, so that bills are issued immediately;
- prompt receipt of meter readings from exchanges and billing of the same without delay;
- immediate stopping of billing after disconnection and closure of connections;
- proper monitoring of outstanding revenue.

Billing, collection and accounting of the WLL service and the landline service of the Company were being done together. Due to non-maintenance of separate year-wise details of revenue billed, collected and outstanding in respect of the WLL service the overall return on the investment made in this service could not be ascertained. However, Audit scrutiny revealed various inadequacies in billing, collection and accounting of revenue with respect to WLL connections as discussed in the succeeding paragraphs.

1.14.1 Accumulation of revenue arrears due to delays in submission of completed advice notes to TRA branch

Rules stipulate that completed advice notes should be forwarded by the Commercial branch to the TRA branch within a week after providing the connections to enable the TRA branch to issue bills to the customers. Scrutiny of relevant records revealed that in 69 SSAs under 19 circles, completed advice notes pertaining to 1,858 WLL telephone connections during the period September 2002 to July 2005 were not received within the stipulated period in TRA branch as detailed in Appendix-XV. As a result, 19200 bills could not be issued to the concerned customers, which led to accumulation of revenue arrears amounting to Rs 1.00 crore.

1.14.2 Short billing of WLL connections

Audit observed that in the Agra SSA under the UP (West) Circle, bills were issued only for 48843 WLL connections as against 52120 working

connections during the year 2004-05. This led to short billing of Rs 3.28 lakh* in respect of 3277 WLL connections. On this being pointed out the Management stated that the billing was not done due to non-receipt of advice notes.

Similarly in J & K Circle, bills in respect of 4,399 and 5,025 WLL connections were issued against 7,119 and 14,508 working connections during 2003-04 and 2004-05, respectively. This resulted in non-billing of Rs 2.23 crore and Rs 7.14 crore during the years 2003-04 and 2004-05 respectively. The reply of the local management was awaited as of November 2005.

1.14.3 Delayed billing of WLL connections

The Company while notifying (February 2001) the tariff for the WLL fixed and mobile services, fixed the billing cycle for this service as a monthly one. Audit, however, observed that in the Hazaribagh SSA under the Jharkhand Circle, bills were issued after delays of two to six months during the year 2004-05. In the Haridwar SSA under the Uttaranchal Circle, bimonthly bills were issued for the initial period of one year (August 2003 to August 2004) and subsequently, the bills were issued monthly. Similarly, in Baripada and Cuttack SSAs under the Orissa Circle, bills were issued bimonthly instead of on monthly basis.

The Management of the Hazaribagh SSA stated (July 2005) that the delay was mainly due to non-receipt of meter readings in time and failure of the computer system and the Management of the SSAs of the Orissa Circle accepted the failure.

1.14.4 Non monitoring of bills of heavy callers

According to instructions (March 2001), customers making over 3,000 calls in a month were to be treated as heavy callers. Such subscribers were to be identified in each SSA and a cell created for ensuring timely billing and collection, besides offering better customer care to them. Test checks in seven SSAs under the Assam, Bihar and Orissa circles revealed that Rs 20.58 lakh was outstanding against heavy callers and no separate monitoring was being done by these SSAs.

1.14.5 Heavy outstanding against WLL customers

The corporate office issued (November 2000) instructions to all the SSAs to sensitize themselves early to the significance and criticality of timely revenue billing and collection. It also emphasized the need to take concrete steps to increase the revenue of the SSAs and to reduce their failures through close monitoring.

Audit noticed that in 35 SSAs in five circles and all SSAs in eight circles, the percentage of collection of revenue over the amount billed during 2002-03, 2003-04 and 2004-05 was 65.60 per cent, 64.88 per cent and 50.17 per cent respectively as detailed in Appendix-XVI. The percentage of outstanding

* calculated at the minimum rate of rent of Rs 100 per connection

revenue showed an increasing trend. At the end of March 2005, the total outstanding against WLL customers in the above SSAs was Rs 113.88 crore.

1.14.6 Non-closing of WLL connections even after 90 days of their disconnections

Rules provide that a disconnected telephone should be closed permanently after a period of 90 days from the date of disconnection. Thus no bills for rent should be generated thereafter. Audit scrutiny in 20 SSAs under the Chhattisgarh, Jharkhand, Karnataka, Madhya Pradesh, Orissa, Rajasthan and UP (East) circles revealed that WLL connections were not permanently closed after 90 days of the disconnections and bills for rentals continued to be issued to the customers.

It was further observed in 12 SSAs of the Jharkhand, Rajasthan and Orissa circles that closing advice notes were not issued by the respective Commercial branches even after the lapse of 90 days and the TRA branches continued to issue bills. This resulted in issue of wrong bills for Rs 22.36 lakh in respect of 1,663 cases of closed connections in these SSAs.

1.14.7 Non availability of automatic disconnection facilities in billing software

Rules provide that a telephone bill should be paid within 15 days from the date of issue. In cases of non-payment, the telephones in respect of individual customers were liable to be disconnected on the fortieth day after the date of issue of bills. A test checks of records of 19 SSAs under the Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa and Uttaranchal circles revealed that the automatic disconnection facility was not available in their billing software.

Audit further observed that in 30 SSAs under eight circles, viz., Assam, Chhattisgarh, Orissa, Rajasthan, Bihar, UP (east), Uttaranchal and all the SSAs in the Madhya Pradesh Circle and Chennai Telephone District, disconnections of telephone connection were not done on time even when two to 19 bills (between 2001-02 and 2004-05) were pending. This led to accumulation of outstanding revenue to the tune of Rs 42 crore against WLL customers as detailed in Appendix-XVII.

RECOMMENDATIONS

- **The Company should strengthen the coordination among its various wings for ensuring complete billing and revenue realisation.**
- **The Company should ensure effective monitoring of outstanding revenue to avoid the risk of accumulation of revenue arrears.**
- **The TRA branch should prepare separate details of the revenue billed, collected and outstanding in respect of their WLL telephone service to monitor the return on investment on this service.**

1.15. QUALITY OF WLL TELEPHONE SERVICE

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 norms. The norms prescribed by TRAI for the 'Quality of service performance of basic service operators' were applicable for the WLL telephone service of the Company. The quality of the WLL service provided by the Company was not completely satisfactory in most of the circles as there were complaints regarding poor coverage, non-provision of umbrella network coverage, system failures, very low signals or no signals in peak hours, call dropping, faulty WLL terminals, frequency overlapping, etc.

A field survey on the quality of the WLL telephone service of the Company in rural and urban areas was conducted by Audit (Company officials accompanied the audit teams conducting the survey) during August 2005. A total of 3,260 customers in 81 SDCAs of rural and urban areas of 17 circles and two metro districts of the Company were surveyed of which 2,359 customers were from 64 SDCAs of rural areas and 901 customers were from 17 SDCAs of urban areas. The important findings of the survey are described below:

1.15.1.1 Non-releasing of new WLL connections in time

Out of the total number of customers surveyed, 2,313 customers (98.05 *per cent*) of rural areas and 897 customers (99.56 *per cent*) of urban areas responded on this issue. According to the norms prescribed by TRAI for basic service providers, after booking of the new connection by the customer, the connection should be released in 'less than seven days'. However, the response received from the above customers revealed that in the case of 61.52 *per cent* of rural and 48.72 *per cent* of urban customers the time taken by the Company in release of new connections exceeded seven days after the booking of connections.

1.15.1.2 WLL telephones remained out of order

According to the norms prescribed by TRAI for basic service providers, the number of telephones lying out of order in a month should be 'less than three per 100 customers'. Out of the total number of customers surveyed, 2311 customers (97.97 *per cent*) of rural areas and 893 customers (99.11 *per cent*) of urban areas responded on this issue. The response received revealed that in a month, the WLL telephones of 41.11 *per cent* and 48.49 *per cent* of rural and urban customers, respectively, remained out of order.

1.15.1.3 Non-rectification of faults within the prescribed time period

According to the norms prescribed by TRAI for basic service providers, the faults of more than 90 *per cent* of faulty telephones should be cleared by the next working day of their reporting. Out of the total number of customers surveyed, 937 customers (39.72 *per cent*) of rural areas and 462 customers (51.28 *per cent*) of urban areas responded on this issue. The response received revealed that the Company did not repair the faults of the WLL telephones of

29.67 per cent and 27.71 per cent of rural and urban customers respectively by the next working day showing lack of coordination between the customer care and operational wings of the Company.

1.15.1.4 Poor voice quality of WLL telephone calls

According to the norms prescribed by TRAI for CMTS operators, the number of calls with good voice quality should be 'more than 95 per cent of calls'. Out of the total number of customers surveyed, 2,323 customers (98.47 per cent) of rural areas and 901 customers (100 per cent) of urban areas responded on this issue. The response received revealed that less than 95 per cent of calls with good voice quality were received by 35.13 per cent and 63.71 per cent of rural and urban customers, respectively indicating of poor network coverage of the WLL system.

1.15.1.5 Repeat dialing to get the desired connections

Out of the total number of customers surveyed, 2345 customers (99.41 per cent) of rural areas and 878 customers (97.45 per cent) of urban areas responded on this issue. Responses received from the above customers revealed that 17.99 per cent and 23.81 per cent of rural and urban customers, respectively, had to dial the desired telephone numbers two or more times from their WLL telephones to get the connections, which was indicative of poor network coverage of the WLL system.

1.15.1.6 Non-provision of additional facilities like STD and ISD in time

According to the norms prescribed by TRAI for basic service providers, additional facilities should be provided to a customer within less than 24 hours of the request received for the same. Out of the total number of customers surveyed, opted for STD/ISD facilities, 260 customers in rural areas and 87 customers in urban areas responded on this issue. The response received revealed that 25 per cent and 16.09 per cent of rural and urban customers, respectively, got additional facilities such as STD and ISD after more than 24 hours of making requests for the same.

1.15.2 Inadequate arrangement for power supply

Audit observed that power supply had become one of the major bottlenecks in the operation of the WLL telephone service, especially in rural areas and in states like Bihar, Jharkhand, Orissa, Uttar Pradesh and West Bengal. Besides the requirement of power for WLL exchanges, there was the requirement for charging the batteries of the WLL terminals by the customers, which should have been assessed properly. In response to the survey conducted by Audit, 1099 customers in rural and 544 customers in urban areas reported problems in charging of their WLL terminals due to non-availability of power supply. Of these customers, 57.97 per cent customers in rural and 24.35 per cent customers in urban areas reported that their WLL telephone sets remained non-functional for more than two days due to non-availability of power.

RECOMMENDATIONS

- **The Company should ensure adherence to the quality of service norms fixed by TRAI to avoid the risk of migration of the customers to other operators.**
- **The Company should ensure proper coordination among its customer care, commercial and operational wings for minimising the delays in attending to customers' complaints and requests for additional facilities to avoid the risks of losing them to their competitors.**
- **The Company should conduct surveys at regular intervals to obtain feedback from its customers about the quality of its WLL telephone services and take immediate corrective action.**

1.16 CONCLUSION

The Company failed to formulate proper strategies and detailed plans at the time of launching the WLL telephone service in 2000-01 and its subsequent expansions. The capacity remained grossly under-utilized both in rural and urban areas mainly on account of deficient planning; mismatches in the procurement of WLL systems and terminals; poor network coverage and poor quality of service. The Company suffered financial losses due to inaccurate assessments of demand and requirement and selection of obsolete technologies.

There is an urgent need for the Company to improve planning and monitoring mechanism in respect of the WLL telephone service, besides improving procurement practices. The system for billing, collection and accounting of revenue from the WLL telephone requires stricter monitoring. The quality of service being provided needs further improvement through better network coverage and customer care.