

Statutory corporations

Rajasthan State Road Transport Corporation

4.11 Computerisation of Ticket Booking/Reservation System

Introduction

4.11.1 Rajasthan State Road Transport Corporation (Corporation) was established (1 October 1964) under Road Transport Corporations Act, 1950. The Corporation is generating revenue of Rs.710 crores per annum (2004-05) through operation of buses. The Corporation decided to computerize its major booking stations from time to time and at present the computerized ticket reservation /booking system is in place at 29 stations for advance, onward, current and return as well online ticketing facilities (only at Jaipur). The works of ticket booking/reservation including application software and installation of hardware at all the stations were being awarded to various outside parties at a commission.

The work of ticket booking/reservation system at Central Bus Stand (Ordinary and Deluxe), Jaipur was awarded to Polytech Computer Education on 1 January 2004 for six months at a commission rate of 0.09 *per cent* on total sale value of the tickets (Excluding Insurance and Toll Tax) generated through computer, which was further extended up to 31 August 2005. The contractor was to provide hardware and furnish Daily Sale Account, Reservation chart and weekly backup of the database to the Corporation. The Deputy General Manger (Statistics) is responsible for monitoring the implementation and maintenance of ticket booking/reservation system.

The Information Technology (IT) Audit conducted at Central Bus Stand (Deluxe) at Jaipur covered issues like general IT controls, application controls, security and the operation of the IT system. The data pertaining to the period from January 2004 to June 2005 were analysed through **IDEA**¹ to examine the effectiveness of ticket booking/reservation system. Audit findings are discussed in the succeeding paragraphs.

Analysis of Data

Lack of Validation Controls

4.11.2 Daily Sale Account (DSA) is the main document available with the depot for accounting its total revenue generated from the sale of tickets. It also contains details like the destination, fare, PNR numbers, number of persons traveled and the total receipts *etc.* Each passenger is allotted separate PNR number (unique). Scrutiny of DSA revealed that:

¹ Interactive Data Extraction and Analysis software.

- the system did not have validation controls to avoid entry of duplicate PNR numbers. Duplicate PNR numbers were allotted (187 cases) resulting in non-accounting of revenue amounting to Rs.0.51 lakh.
- the system did not have continuity in PNR numbers. 1,284 of PNRs were found missing from the database. Out of these, in 15 cases, PNR numbers, though not available in DSA, were found in the database from which the bus charts were generated for the journeys.

Absence of the desired validation checks posed a risk to the system with revenue leakage.

The Corporation stated (August 2005) that one duplicate PNR case was noticed in February 2005 but revenue had since been brought into account. The reply is, however, silent about the cases pointed out by Audit.

Discrepancies in the procedure of Ticket cancellation

4.11.3 The Corporation issued (November 1999) an office order for 'cancellation of ticket' which provided that:

- If a ticket is cancelled before 24 hours of the bus departure then five *per cent* amount will be deducted from the ticket amount and balance 95 *per cent* will be refunded;
- If a ticket is cancelled within 24 hours and before one hour of the bus departure then 20 *per cent* amount will be deducted from the ticket amount and balance 80 *per cent* will be refunded.
- If a ticket is cancelled within one hour and before 30 minutes of the bus departure then 50 *per cent* amount will be deducted from the ticket amount and balance 50 *per cent* will be refunded.
- If a ticket is cancelled within less than 30 minutes before the bus departure or after the bus departure then no amount of the ticket will be refunded.
- In case a passenger who had already reserved his ticket and wanted to re-schedule his journeys date, Rupees five would be charged for the rescheduling.

It was observed during audit that the system allowed full refund amount without deducting cancellation charges as mentioned above in respect of cancellation of tickets within five minutes from the time of issue of ticket (8967 cases) during the period, which resulted in loss of revenue of Rs.5.98 lakh.

Countersignatures of the passengers were not obtained on the refund vouchers and as such the actual refunds made to the passengers also could not be ensured.

The system did not have facility to charge for re-scheduling of the journey ticket, from the passengers, though the Board had decided (1999) to charge rupees five for rescheduling of the journey.

The Corporation stated (August 2005) that a provision to allow the cancellation within five minutes without any deduction was incorporated in the system even though no such orders exist and the provision for rescheduling of journey date would be introduced in future.

Change management controls

4.11.4 Audit scrutiny revealed that the Corporation had no documented formal policy relating to change management controls, testing standards, quality assurance standards and documentation standards. All the changes in the programme were being made by the contractor and not documented by the Corporation. Scrutiny of the records during audit revealed that:

- the starting PNR Numbers in the Server had been changed in seven cases without the knowledge of the competent authority.
- the toll tax in respect of three stations to be recovered from the passengers was not included in the bus fare.
- there was no formal segregation of duties among the personnel operating the system.
- documentation of the system control and process, user manual was not made available to the Corporation by the contractor even though agreement provided for that.
- there was no policy regarding Risk Analysis, Risk Mitigation Methodology and well-defined password policy.
- the Corporation did not have a proper documented 'Disaster Recovery and Business Continuity Plan'. In the month of March 2003, an outsider had un-authorisedly entered the main server through the net and corrupted the whole database of the ticket system. The database prior to April 2003 was lost and the ticket reservation system remained closed for 5 days (9.4.03 to 11.04.03 and 29.03.03 to 31.03.03). Despite this the Corporation did not take any corrective step. The Corporation though assessed an expected loss at Rs.10 lakh, had not taken any action to recover the same from the contractor.
- the contractor did not provide any back up of the database to the Corporation as per the agreement and the same was also not insisted upon.

The Corporation stated (August 2005) that these issues would be taken care of in the new contract.

Summary

The Corporation failed to ensure reliability of computerized ticket booking/reservation system due to :

- absence of a well laid down IT Policy, password policy and logical access control mechanism.
- access to the users of out side agencies to Server, Database, Application Software, operating system and associated utilities system made the system highly vulnerable to the threats of unauthorized modifications, deletions *etc.*, in the database as well as the programme.
- lack of segregation of duties resulting in ineffective control on the system by the management of the Corporation.
- non adoption of a foolproof system to prevent failure caused by various reasons, the probability of occurrence of problems like data loss encountered by the organization during the initial years of computerization still exist.

~~Extra Expenditure in purchase of re-treading material~~

~~The corporation did not follow the Committee's recommendation and placed the purchase order at a higher rate resulting in an extra expenditure of Rs.17.19 lakh.~~

~~4.12 Rajasthan State Road Transport Corporation (Corporation) invited open tenders on 2 June 2003 for purchase of re-treading material, which were opened on 10 July 2003. Out of 13 tenders received, 12 firms were considered as acceptable. The Purchase Board, while considering the issue on 9 September 2003 decided to obtain good sample size and performance for a longer span, in view of the erratic performance of the firms during the past three years and deferred the decision of purchase to the subsequent meeting.~~

~~In view of this decision, the Corporation constituted a Committee consisting of Financial Advisor, Executive Director (Engineering) and General Manager (Tyre) on 17 September 2003 to compare the procedure and formulae for purchases being adopted in other State Transport Undertakings.~~

~~The Committee, *inter alia*, recommended on 15 October 2003 that duration of performance of tyres should be kept the same as done earlier i.e. for 18 months. In case, however, any firm was ignored for placement of order in previous purchases due to higher cost per tyre per hundred kilometer (CPTK) and later on, its performance in respect of remaining tyres improved than the duration of such firms be considered for the previous period also so as to ascertain their total performance.~~