4.2 Computerisation project in the Transport Department

Highlights

* The Transport Department failed to achieve the objective of issuing smart cards due to non-updation of data stored in them and non-utilisation of hand held terminals that are necessary to read data. The smart cards also lacked the requisite security features.

(Paragraph 4.2.6)

* Lack of application checks in the software had resulted in the objective of checking evasion of revenue remaining unachieved.

(Paragraph 4.2.7)

* Lack of application controls resulted in non-detection of the use of fake insurance cover notes and duplicate registration, chassis and engine numbers. The objective of checking the use of forged and fake documents remained unachieved.

(Paragraph 4.2.8)

* Lack of essential controls had resulted in significant amount of incorrect, duplicate and missing data rendering the computer database unreliable and incomplete in many cases.

(Paragraph 4.2.10.2)

* The State Government failed to safeguard its interests at the stage of entering into the contract with the vendor.

(Paragraph 4.2.13)

4.2.1 Introduction

Smart card based computerisation project was introduced by the State Government in October 2001 with the objectives of checking evasion of government revenue and use of forged and fake documents in respect of motor vehicles; establishing a management information system; and ensuring efficiency and transparency in the departmental activities etc.

The work of computerisation was outsourced to M/s Smart Chip Limited in October 2001 on BOO (build-own-operate) basis for a period of five and a half years. The contract was subsequently converted into BOOT (build-own-operate-transfer) by a supplementary agreement in April 2005. The period of the contract has been extended until a vendor is selected under the new tender floated in August 2007.

4.2.2 Organisational set up

The Transport Department functions under the overall charge of the Principal Secretary (Transport). Issue of driving licenses and levy and collection of tax/fee/penalty on vehicles is administered and monitored by the Transport Commissioner (TC). He is assisted by three Deputy Transport Commissioners (DTC) and internal audit wing at headquarters level and nine regional transport officers (RTOs), 11 additional regional transport officers (ARTOs) and 25 district transport officers (DTOs) at field level. The computerisation project is under the charge of DTC (Enforcement).

4.2.3 Audit objectives

The review was conducted with a view to assess:

* the extent to which objectives of the smart card based computerisation project had been achieved;
* whether information technology controls were adequate to ensure integrity, reliability and confidentiality of data maintained in the Transport Department; and
* whether agreements/contracts with the outsourcing agency were formulated and managed effectively.

4.2.4 Audit scope and methodology

The records and general controls in the office of TC, Gwalior and seven field offices[1] for the period between October 2001 (when the computerisation project was started) and May 2007 were scrutinised from April 2007 to May 2007. Data analysis, however, was done on data upto January 2007[2]. Data stored in the central server placed at Gwalior and application controls were also analysed. Results of data analysis were also cross checked with the manual records maintained in the field offices.

4.2.5 Acknowledgement

The audit findings were reported to the Government/department in July 2007. The audit review committee to discuss the findings of review was held in August 2007. The department was represented by the TC while the Principal Secretary, Transport Department represented the Government. They had accepted most of the audit observations and recommendations and their replies have been incorporated in the review.

[1] RTO: Gwalior and Bhopal; ARTO: Dhar, Chhatarpur Katni and Shahdol, and DTO, Shajapur.

[2] Data entry was done upto January 2007. It was in progress for February 2007.

Audit findings

System deficiencies

4.2.6 Objective of issuing smart cards remained unachieved

4.2.6.1 As per the computerisation project, driving licences and registration certificates were to be issued on smart cards. A smart card is a pocket sized plastic card embedded with a computer chip. A special hand held terminal (instrument) is required for reading the information stored in the computer chip and for generating challans.

Audit noticed that the hand held terminals (HHTs) were not distributed to the enforcement personnel by any of the seven offices audited and were lying unutilised in the RTOs. In the absence of the HHTs, enforcement personnel could neither access crucial information such as the latest tax, permit and fitness status stored in the smart cards nor could they generate challans in case of offences under the Motor Vehicles (MV) Act. Further, it was also observed that smart cards of commercial vehicles were not being regularly updated in majority of the cases with latest tax, permit and fitness details. Failure to utilise HHTs and update the smart cards regularly with tax/fitness/permit details had rendered smart cards as mere plastic cards defeating the objectives of the smart card based computerisation project. Also, due to non-utilisation of HHTs, objectives[3] of the computerisation project such as networking of these terminals with the local server of RTO and creation of hot list could not be achieved. Moreover, HHTs costing Rs. 92.9 lakh were lying unused in the RTOs.

The Government accepted (August 2007) the audit observation regarding non-utilisation of HHTs and non-updation of data in the smart cards. It stated that it was not practical to regularly update the smart cards as owners of the vehicles did not bring them to the RTO at the time of payment of tax. Reasons for non-utilisation of HHTs were cited as delay in their supply by the vendor, lack of training to field personnel and frequent changes in the smart card specifications. The reply is not tenable as the smart cards will not serve any purpose unless the latest data is fed into them and is accessible to the enforcement personnel.

The Government may evolve a system to ensure utilisation of HHT and regular updation of smart cards.

[3] The purpose of networking of HHTs was to daily update the data related to driving offences at RTO's local server. The purpose of creation of hot list was to prevent re-issue of a driving licence or a registration certificate in cases where they had been impounded by the Transport Department.

4.2.6.2 Absence of security features in smart cards

As per the Central Motor Vehicles Rules, 1989[4], security features like ghost image and/or hologram is to be provided in the driving licence smart cards.

Audit observed that smart cards that were being issued from the smart card centres did not have any of these two security features. In addition, 400 ultra violet lamps were to be supplied by the vendor for reading the secret number on the smart card to establish the authenticity of a smart card driving licence. It was noticed that neither were any secret numbers printed on the smart cards nor was any ultra violet lamp supplied by the vendor. In the absence of these security features on smart cards, it is not possible for the enforcement personnel (check posts/flying squads) to establish the authenticity of a driving licence produced to them while checking.

The Government replied (September 2007) that action would be initiated to penalise the vendor for non-supply of UV lamps and the amount of penalty would be deducted from the final payments to the vendor. Regarding security features, the Government replied that it would suggest an amendment to the Central Motor Vehicle Rules as hologram and ghost image were optional features in the SCOSTA[5] specifications issued by the Central Government.

4.2.7 Objective of checking evasion of revenue remained unachieved

Evasion of revenue can be checked by incorporating adequate application checks in the software. **Audit noticed that necessary controls such as rejection of a transaction in case incorrect amount of tax/fee/penalty was deposited, had not been built into the software.** Computerisation was being used only as a data entry tool once the process of tax/fee/penalty collection had been performed manually. Many cases of non/short levy of fee/penalty were noticed during data analysis which could have been avoided had adequate application controls been programmed in the software. A few cases are mentioned in the following paragraphs.

4.2.7.1 Loss of revenue due to allotment of reserve registration numbers to vehicles without levying special fee

As per Rule 55A of Madhya Pradesh Motor Vehicles Rules, 1994, the registering authority shall allot reserve registration numbers in a series to any vehicle only after payment of the special fee. For example, registration numbers from 1 to 9 are allotted against a special fee of Rs. 15,000 and numbers from 10 to 100 are allotted against a special fee of Rs. 12,000.

[4] Note under form-7 [Rule 16(2)].
[5] Smart Card Operating System for Transport Application (SCOSTA).

Analysis of the data provided to audit from the central database revealed that in Additional RTO, Chhatarpur, reserve registration numbers were allotted to 177 vehicles between 15th February[6] 2001 and September 2003 without recovery of special fee from the vehicle owners. This resulted in loss of revenue of Rs. 21.60 lakh. Results of the data analysis were confirmed by manual test check of records in ARTO, Chhatarpur.

4.2.7.2 Non-levy of penalty on delayed payment of vehicle tax

According to Section 13 of the Madhya Pradesh *Motoryan Karadhan Adhiniyam,* 1991, if the tax due has not been paid by the owner of the vehicle within the prescribed period i.e. 15th of the month after the end of the quarter in respect of the goods vehicle, the owner should be liable to pay penalty at the rate of four *per cent* per month on the unpaid amount of tax.

Analysis of the data revealed that penalty was not charged in 8,442 cases of goods vehicles[7], which had paid vehicle tax either on 16 January 2006 or 16 October 2006. This resulted in non-recovery of penalty amounting to Rs. 14.16 lakh. Results of the data analysis were confirmed by the manual test check of records in RTO, Morena. It was observed that penalty was not levied in any of the 88 cases where tax was paid either on 16 January 2006 or 16 October 2006 i.e. after the due date of 15th January or October.

4.2.7.3 Short levy of temporary permit fee

The Transport Department in its notification dated 19 January 2006 enhanced the rate of fee from Rs. 500 to Rs. 750 in respect of temporary permits granted to transport vehicles u/s 87 (i)(b) and (c) of the MV Act.

Analysis of the data provided from the central server revealed that 1,098 goods and public service vehicles deposited temporary permit fee at the rate of Rs. 500 after 19 January 2006 in 18 offices[8]. This resulted in short levy of Rs. 2.74 lakh. The results of data analysis were confirmed by manual test check of the records in RTO, Sagar. Scrutiny of 71 files produced to audit confirmed short levy of temporary permit fee in all the 71 cases. **This indicates that sufficient application checks were not built into the software to ensure correct levy of fee/penalty.**

After the cases were pointed out, the Government accepted (August 2007) the audit observations. It stated that action for recovery was being initiated and adequate

[6] Date from which special registration fee was to be levied.

[7] with registered laden weight (RLW) of 16,200 kg and 25,000 kg.

[8] Bhopal, Chhatarpur, Chhindwara, Dewas, Guna, Hoshangabad, Indore, Jabalpur, Khandwa, Morena, Rewa, Sagar, Satna, Seoni, Shivpuri, Sidhi, Ujjain and Vidisha.

controls would be built into the software to ensure correct levy of tax, fee, and penalty.

The Government may consider ensuring that calculation of tax, penalty and fee is done through the computer system to bring transparency in the transactions. Necessary controls should be programmed into the software to ensure collection of correct amount of fee/tax/penalty before a transaction is completed.

4.2.7.4 Audit noticed that the software module for reconciliation of departmental challans with the treasuries had not been implemented in any of the seven offices audited. The objective of reducing leakage of revenue through reconciliation module by locating fraudulent challans, thus, remained unachieved.

4.2.8 Objective of checking use of forged and fake documents

4.2.8.1 Non-detection of use of fake insurance cover notes

A valid insurance certificate is required to be furnished along with the application for registration, transfer of ownership of vehicle, duplicate registration certificate, etc.

Analysis of the data provided to audit revealed 3,88,501 cases of duplicate insurance cover note (ICN) numbers in the State suggesting that one ICN was illegally used by two or more vehicles for the purposes mentioned above. The results of data analysis were crosschecked with the manual records in the RTO, Morena. Test check of 44 files produced to audit confirmed the use of fake ICNs by the vehicle owners. The transport authorities did not verify the validity of the ICN submitted along with the application. **In addition, there was no validation check[9] in the software to ensure that the insurance cover filed for a particular vehicle was not reused for other similar vehicles.**

4.2.8.2 Non-detection of duplicate registration, chassis and engine numbers

Chassis and engine number are unique identification marks of a vehicle which are essential for the purpose of its registration under the provisions of the MV Act and rules framed thereunder.

Analysis of the vehicle data provided to audit by the Transport Department revealed 39,473[10] and 22,165[11] cases of duplicate chassis and engine numbers respectively, suggesting multiple registration of a single vehicle. Such duplicate registration of the same vehicle is not only illegal but is also fraught with the risk of plying of invalid/stolen vehicles as well as insurance irregularities by declaring non-existent

[9] The computer system would not have allowed duplicate ICNs if the ICN field been made a 'unique' field in the software.

[10] 39,473 registration numbers were found granted to 16,584 vehicles (chassis numbers).

[11] 22,165 registration numbers were found granted to 10,527 vehicles (engine numbers).

vehicles as stolen. In addition, there were 2,990 instances of one registration number being granted to two or more vehicles (chassis). These 2,990 registration numbers were found granted to 6,005 vehicles. The matter needs to be investigated in detail by the Transport Department.

The Government accepted (September 2007) the audit observation and stated that the software was being modified to include essential application controls for checking the use of fake documents. An FIR was also being lodged in Morena district for use of fake ICNs.

4.2.9 Objective of checking driving test/fitness before issue of driving licence/registration certificate remained unachieved

4.2.9.1 One of the stated objectives of the computerisation project was to ensure that the applicants pass driving test as a mandatory condition under the MV Act and rules for issue of the driving licence.

Test check of the records at RTO, Gwalior revealed that 10,063 driving licences were issued while only 1,909 applicants had been passed by the Driving License Board during September 2006 to March 2007. The objective of ensuring passing of driving test before issue of permanent driving licence was, therefore, not being achieved. It was also observed that the mandatory details of driving test such as driving test date and the registration number of the vehicle on which driving test was conducted were not available in the computer system. The software developed by the vendor did not provide for capturing these details. In addition, the designation and name of the authority, which conducted the driving test, had not been captured in 17.82 lakh (73 *per cent*) cases of issue of permanent driving licence. **Reasonable assurance that driving tests were actually being conducted before issue of licences could not be derived due to lack of controls in the software.**

4.2.9.2 It is mandatory for all the transport vehicles to have fitness certificate at the time of registration. This was also one of the objectives of the computerisation project. This objective remained unachieved for the first five years of the project as fitness certificate module was not developed and implemented by the Transport Department till October 2006. Further, controls were not built into the fitness and registration modules to check fitness of a vehicle before registration.

Analysis of the data relating to fitness certificates revealed that 5,571 out of 8,072 transport vehicles registered after October[12] 2006 in the State did not have fitness certificate details in the computer system.

The department accepted (September 2007) the audit observations and stated that the software would be modified by incorporating the necessary application checks.

[12] Month from which fitness certificate module was started.

The Government may consider strengthening of the application controls to prevent use of fake documents and to ensure reliability and usefulness of data.

4.2.10 Objective of implementing an effective MIS system

4.2.10.1 One of the objectives of the computerisation project was to generate MIS reports for better monitoring and evaluation and for checking evasion of revenue.

Audit noticed that the MIS reports as required by the Transport Department were not made available by the vendor till May 2006 i.e. for more than four years of the project. In response to an audit query, five[13] out of the seven field offices reported that the MIS reports were not being used by them. It was also observed that important reports such as demand and recovery register, list of commercial vehicles that have defaulted in tax payment, etc. were not being generated in any of the seven offices audited.

The Government stated (September 2007) that effective MIS system with adequate number of computers at field offices would be ensured in the new contract under consideration.

4.2.10.2 Data analysis of the central database revealed that the application software was fraught with many deficiencies and validation inadequacies. Many input controls were either missing or inadequate to ensure reliability and usefulness of the data maintained in the Transport Department. **Lack of essential controls had resulted in significant amount of incorrect, duplicate, and missing data rendering computer database unreliable and incomplete in many cases.** Module wise examples of control weaknesses observed during data analysis are mentioned below:

Mandatory fields	Number of missing records	Junk/ garbage data	Duplicate records
Vehicle database (Total records: 20,43,804)			
Registration number	44	2,265	6,005
Insurance Cover Note Number	5,88,773	1,14,967	3,88,501
Chassis number	261		39,473
Engine number	234		22,165
Vehicle price	4,472	3,94,514	
PAN number[14]	17,76,990	3,255	
Owner's income	17,80,377		

[13] RTO Bhopal, ARTO Dhar, Katni and Shahdol and DTO Shajapur.

[14] For vehicles registered after 31-05-2002.

Fitness certificate module (Total records: 49,325)			
Fitness testing authority	40,960		
Date of fitness test	41,224		
NOC module (Total records: 41,204)			
Place to which NOC issued	9,914		
Date of effectiveness of NOC	9,912		
NOC number	2,013		27,478
Temporary permit database (PSV) (Total records: 53,362)			
Route distance	28,647	2,263	
Permit number	1,490		13,095
Vehicle receipt module (Total records: 27,02,813)			
Receipt number	193		3,48,923
License receipt module (Total records: 16,75,794)			
Receipt number	63		7,333
Learning license module (Total records: 13,83,740)			
Sex of the applicant	13,83,740		
License number	14,629		250
Permanent license module (Total records: 12,97,465)			
Sex of the applicant	12,97,465		
License number	74		191

The Government accepted (September 2007) the audit observation and stated that adequate application checks would be programmed into the software.

Other deficiencies

4.2.11 Inadequate preparedness for facing adverse circumstances

4.2.11.1 It is essential that computer hardware, software and data are kept under strict fire safety measures. During audit, fire safety measures were found inadequate as fire extinguishers, fire alarm and smoke detection systems were not in place in any of the seven offices audited.

The Government stated (September 2007) that fire and safety measures would be ensured in the new contact under consideration.

4.2.11.2 It was observed that the department did not have a formal business continuity and disaster recovery plan for continuation of the departmental activities in the event of a disaster. Also, there was no formal backup policy of the department. In all the field offices audited, backup of data was not being taken on an external media so that it could be stored in an offsite fire safe location and was readily available when needed. In the event of data loss, field offices were dependent on backup data stored on central server placed at Gwalior. It was also observed that backup/standby servers were not installed in the field offices (especially the bigger offices) so as to immediately resume the work in case of server failure due to some fault or crash.

Thus, in case of a disaster taking place there was a likelihood of the computerised system coming to a halt leading to disruption of work in the transport offices.

After the above cases were pointed out, the Government in September 2007 accepted the fact that some shortcomings had been noticed in the programme and stated that a consultant of international repute had now been hired and all the shortcomings noticed by audit would be rectified.

4.2.12 Lack of proper documentation and system development controls

4.2.12.1 Before developing any computer system, user requirement specifications (URS) and software requirement specifications (SRS), which give the complete description of the system to be developed, should be approved by the higher management so that the vendor understands the needs of the organisation. Also, documentation such as URS, SRS, detail design, data flow diagram, date dictionary, relationship between tables etc. is crucial for continuity of the computerisation project of the Transport Department since the work has been outsourced under the BOOT contract. Subsequent vendor who is awarded the contract needs to have proper documentation to understand the existing application and effectively discharge the functions. Audit noticed that the department did not have a proper written and authenticated documentation of licence, registration, permit, tax, fitness and NOC modules developed by the vendor.

The Government stated (September 2007) that the vendor had been instructed to complete the documentation before completion of the contract term.

4.2.12.2 There was no system in the Transport Department to test and formally accept the modules developed by the vendor before they were implemented in the field offices. Also, there was no change management policy or acceptable formal procedure for making changes to the software. The department did not formally authorise the changes that were to be carried out in the software by the vendor. Log of changes made to the application software was also not being maintained. This reflects an ad hoc approach and lack of involvement by the Transport Department towards development of the application software.

After the above cases were pointed out, the Government in September 2007 accepted the fact that some shortcomings had been noticed in the programme and stated that a consultant of international repute had now been hired and all the shortcomings noticed by audit would be rectified.

4.2.13 Contract management

Scrutiny of the contents of the main and supplementary agreements and their implementation revealed serious lapses that are discussed in the succeeding paragraphs.

4.2.13.1 Undue favour to the vendor

Scrutiny of the main agreement (October 2001) revealed that the clause for liquidated damages was not included in the contract to safeguard the interest of the Government in case the vendor defaulted in the contractual obligations. Despite a mention of liquidated damages in the tender document and recommendation by the committee chaired by the Chief Secretary for inclusion of a penal clause (June 2001), the Government failed to include the clause in the main agreement. The committee appointed by the Government noticed in June 2004 that the performance guarantee and arbitration clauses of the tendered document were changed in favour of the vendor at the time of entering into the contract. In addition, the liability clause included in the tender document empowered the Transport Department to complete the project at the risk and cost of the successful bidder in case the contract was terminated due to failure of the vendor. This clause was not included in the contract. Rather, as per the terms of the contract, the Government had to acquire all the hardware, software, smart cards etc. from the vendor at the price determined under the contract even if the contract was terminated due to the continued failure of the vendor.

The terms of the contract pertaining to 'Local Area Network' and 'duration of the contract' were not precise and definite leaving sufficient room for ambiguity and misconstruction. The timeframe for completion of the various activities under the contract was not specified to enable periodic assessment of the performance of the vendor on contractual obligations. Also, the processes that were required to be computerised by the vendor such as tax payment, cash and challan management, issue of permits etc. were not clearly specified in the contract. The State Government also failed to obtain legal advice before entering into the contract as required under the MP Financial Code Volume-I and as recommended by the committee chaired by the Chief Secretary on 14 June 2001.

The matter was reported to the Government; their reply has not been received (January 2008).

4.2.13.2 Irregularities and lapses observed during execution of the main agreement

∗ Payments of Rs. 8.8 crore were made to the vendor without obtaining bank guarantee of Rs. 50 lakh from the vendor as required under the main agreement. The vendor failed to start data entry for the purpose of creating a central database and generate MIS reports for more than two years. Despite failure on these two components of the definition of "Satisfactory Performance" under the contract, payments of Rs. 8.8 crore were made to the vendor till the month of July 2003.

∗ As per the main agreement (October 2001), system audit of the computerisation project was to be conducted by an agency called MAP_IT to assess the performance of the vendor. The Transport Department failed to get the system audit conducted by MAP_IT. First objective evaluation of the performance of the vendor was done after two years and four months from the date of commencement of the contract by the Transport Department. As a result, despite continued failure of the vendor to carry out various contractual obligations under the contract, the Transport Department was not able to initiate any corrective action for more than two years. Moreover, the TC issued a certificate (September 2003) in favour of the vendor stating that the work of issue of smart cards was smooth and as per the Government directions.

Due to the terms of the main agreement being in favour of the vendor coupled with poor monitoring of the contract, the State Government was not able to hold the vendor accountable for his repeated failure to discharge his contractual obligations. Rather, the State Government lost in the court of law (District Court, Bhopal and High Court, Jabalpur) after the vendor filed a petition in 2004 against the withholding of its payments by the State Government. Further, poor contract management was one of the main reasons for failure of the project for more than two years.

The Transport Department accepted (September 2007) the above mentioned observations and replied that the new contract under consideration would be professionally drafted by engaging a consultant of international repute.

4.2.13.3 Contractual obligations of the vendor not yet discharged

In addition to non-supply of 400 ultra violet lamps and non-networking of HHT as mentioned in paragraph 4.2.6.1, the following contractual obligations are yet to be discharged by the vendor :-

∗ As per the contract, data entry of old vehicles was to be completed by October 2006. It was observed that total number of registered vehicles as on 31 March 2006 were 46.09 lakh. Out of this, data entry of 17.12 lakh vehicles was done by the vendor

till January 2007. Considering the cost of data entry of one record as Rs. 4[15], data entry work worth Rs. 1.16 crore is yet to be discharged by the vendor. Further, it was observed during the audit of field units that data entry done by the vendor was not being authenticated and validated by the department personnel resulting in significant quantity of incorrect and missing data.

The audit observations were accepted (September 2007) by the Government and it stated that deductions would be made from the final payments to the vendor for incomplete data entry work.

∗ As per the supplementary agreement, computer hardware installed in the beginning of the project was to be upgraded by October 2006. Configuration of the new hardware to which old hardware was to be upgraded was not specified in the agreement. Audit noticed that upgradation of old hardware had not been done in any of the seven offices audited (April & May 2007).

4.2.14 Conclusion

Smart card based computerisation project which aims to bring accuracy and transparency in the activities of the Transport Department, has a tremendous potential to check evasion of revenue and use of fake documents. The objectives of the project, however, remain unachieved due to poor implementation and failure of the higher management to provide a detailed roadmap for computerisation of the various activities. Driving licence and RC applicants are being charged Rs. 200 extra as cost of smart cards without any benefit being derived from them. Issue of permits and tax collection procedures have not been computerised even after five and a half years reflecting low commitment towards bringing transparency in the departmental activities. Further, adequate application controls have not been built into the system to ensure reliability and usefulness of the data maintained in the Transport Department. As a result, the Transport Department has not been able to derive most of the benefits of computerisation and depended on manual procedures for most of its activities.

[15] As estimated by the Centre for Research and Industrial Staff Performance (CRISP), an agency appointed by the State Government for technical audit of computerisaton in the Transport Department.

4.2.15 Summary of recommendations

The Government may consider implementation of the following recommendations for rectifying the system and other issues:

- The Transport Department must provide a detailed roadmap within a specified timeframe for computerisation of various activities by the field offices;
- Regular updation of smart cards with latest tax, permit and fitness details should be made mandatory;
- Calculation of tax, penalty and fee should be done through the computer system to bring transparency in the transactions. Necessary controls should be programmed into the software to ensure collection of correct amount of fee/tax/penalty before a transaction is completed; and
- Application controls may be strengthened to prevent use of fake documents and to ensure reliability and usefulness of data.