FINANCE DEPARTMENT

3.4 **I.T. Audit of Computerisation of State Treasuries**

The Treasury Computerisation System in Uttar Pradesh was implemented in 1985-86 with a view to overcome the weakness of the manual system and to exercise better budgetary control. The State treasuries, functional units of the Government Financial System, handle the day-to-day transactions of receipt and payment of the Government. An Information Technology audit of treasuries was conducted to assess the effectiveness of the implementation and operation of the computerised system.

HIGHLIGHTS

Study of the Users Requirement was not undertaken which led to frequent changes in software versions. There was no record of approval of the System Requirement Specification document.

(Paragraph 3.4.5.1)

Change request statements were not documented and records of testing and acceptance of the amendments carried out were not maintained

(Paragraph 3.4.5.2)

Physical and logical access controls were inadequate in absence of documented password policy and user logs were not maintained.

(Paragraph 3.4.5.3 to 3.4.5.4)

Re-appropriation orders were not validated leading to incorrect re-appropriation in test checked treasuries.

(Paragraph 3.4.6.1)

The system of payment of pension through the computerized system was not effective as data relating to pensioners was not validated.

(Paragraph 3.4.6.2)

Budget control upto object head level was ineffective as expenditure in excess of budget provision and Drawing and Disbursing Officers' allotment was incurred through correction of expenditure option.

(Paragraph 3.4.7)

3.4.1 **Introduction**

The State Treasuries, structural and financial unit of the Government Financial System, are responsible for handling the day-to-day transactions of receipt and payment of Government. In Uttar Pradesh, 72 treasuries are functioning at the district level. At the '*tehsil*' level, 307 sub-treasuries are performing functions of treasuries. The district treasuries are responsible for passing of bills presented by Drawing and Disbursing Officers (DDOs), compilation and submission of accounts to Accountant General (A&E), transmission of monthly data to the Financial and Statistical Directorate (FSD), Lucknow.

Each district treasury works as a separate unit and the transactions of sub-treasuries are included in the accounts of their respective district treasury.

The Government decided (1985-86) to computerize the operations of treasuries to reduce incidence of human error, exercise better budgetary control, prepare clean and legible copies of accounts in time and have real time data relating to cash outflow and progress of utilization of available funds. The process was started (1985-86) under the pilot project undertaken by Uttar Pradesh Development Systems Corporation (UPDESCO) in three[1] treasuries using Dbase software. As UPDESCO failed to deliver the desired results, National Informatics Centre (NIC) was entrusted the work of computerisation in 1994-1995 using Fox-Plus based application. Computerisation of all the district treasuries was accomplished by 1999-2000. Fox-plus application was replaced by Oracle based application over Linux platform in August 2001.

The NIC was responsible for installation of hardware, development and implementation of the application software. Treasuries were provided with a Xeon server, backup server, line matrix printers, UPS, generator and dumb terminals. The application software running in treasuries during 2006-07 was 'Integrated Treasury System Application' (ITSANIC) version-5.3. Rs.22.33 crore was incurred for procurement of hardware and software from 1993-94 to 2005-2006.

3.4.2   Organisational set- up

The treasuries function under the direct control of the District Magistrate. The Director of Treasuries supervises and exercises overall administrative control over the treasuries and sub-treasuries. The Director is assisted by Additional Directors and Joint Directors posted in 17 Zonal Offices. The Chief Treasury Officer (CTO) or the Treasury Officer (TO) heads the district treasuries at district level assisted by accountants in performing their duties.

3.4.3   Audit objectives

The performance appraisal aims at assessing the efficiency, economy and effectiveness of the computerization programme. This theme is further divided into the following objectives to ascertain whether:

- implementation and operation of the system was effective;
- control features of software were adequate;
- business continuity plan/ Disaster recovery Plan was effective;
- budget control upto object level, was effective; and
- mapping of business rules in the IT environment were adhered to.

3.4.4   Scope of Audit and methodology

As the same software was in use all over the State, application thereof was examined in five[2] district treasuries. The selection of treasuries was based on

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[1]   Lucknow, Allahabad and Unnao
[2]   Lucknow, Allahabad, Kanpur, Agra and Gorakhpur treasuries

SRSWR[1] sampling technique. The treasury data (oracle dump) for the year 2006-07 in respect of these treasuries was obtained and analyzed using Computer Assisted Audit Technique (CAAT).

The audit objectives and audit criteria were discussed with the Government in an entry conference held in April 2007. The exit conference was held with the Government in October 2007.

Audit findings

3.4.5 General controls

3.4.5.1 Lack of documentation

The Director of Treasuries was the designated authority to approve, implement and monitor the computerization of treasuries. However, no perspective plan for the computerization of treasuries was prepared. Documentation of the User Requirement Specification (URS) was not done which led to frequent modifications in the application software. No record of approval of the System Requirement Specification (SRS) and record of testing and acceptance of the application software were available with the Directorate.

Documentation of URS was not done leading to frequent modification to the application software

Complete details of input, transaction and output tables and their linkages were not described in the SRS as the document was for use of NIC only.

This indicated that the computerisation programme was implemented without formulating a firm documentation policy. As a result, the original user requirements or the proposed architecture of the software could not be referred to at the time of audit.

3.4.5.2 Change management and version control

Frequent changes were made in the software versions for which complete details like the dates and reasons for carrying out version changes were not available on record. There was no record of testing and acceptance of the amendments carried out in the software. The SRS provided to audit pertained to the ITSANIC version-2 (September 2004) whereas during 2006-07 ITSANIC version 5.3 was running in treasuries. Non- availability of the change request statements after release of version-2 made it difficult to establish the current active data tables and data flow structure. There is a risk of accidental or malicious changes to system and data due to inadequate change management control.

In reply, the Government stated (November 2007) that with effect from April 2007 records in respect of changes carried out were being maintained.

3.4.5.3 Information System security measures

Physical and logical access control were inadequate and user logs were not maintained

System security is designed to supervise, restrict, control and account for the access of any users to the system. However, security features as provided by the system were inadequate as detailed below:

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[1] Simple Random Selection with Replacement

The system allows three attempts to the user to logon to the system. After the third unsuccessful attempt the system returns to the logon screen again and the user can start the entire process afresh. Thus, the user was able to make virtually unlimited attempts without being blocked by the system thereby increasing the risk of unauthorised access to the system. In reply, the Government stated (November 2007) that provision would be made in this regard in version 5.4.1 (installed with effect from June 2007).

For effective monitoring and control over the system, maintenance of log files and audit trail are essential. However, no user logs to record changes or to detect unusual or unauthorised activities were maintained. The roles and privileges assigned to users were captured in the system but no record of changes were maintained to track the previous details. The situation was risk prone as any activity performed by any unauthorized user could not easily be tracked. In reply, the Government stated (November 2007) that provision would be made to generate log files in version 5.4.1.

Passwords are an important aspect of computer security. However, no password policy was framed. In test checked treasuries, it was found that users were using the same passwords for more than three months and the passwords were found to be non- alpha numeric and in some cases lying unencrypted in the database tables. In reply, the Government stated (November 2007) that a password policy would be framed and implemented soon.

3.4.5.4   Business continuity/ disaster management plan

The business continuity plan or a disaster management policy is essential to enable the organisation to continue their activities in case of system crash, calamities like theft, fire and floods, etc. This policy details the procedures to be followed in case of any calamity and also identifies locations away from the actual data generation centres for safe backups and restoration of data. However, the Department framed no policy in this regard. As treasury computerisation process captures data from initial bill passing to cheque generation, the risk of loosing critical data in case of any disruption was high.

In reply, the Government stated (November 2007) that soon a policy in this regard would be framed.

3.4.6   Input controls

3.4.6.1   Incorrect capturing of data

Reappropriaiton orders were not validated leading to incorrect reappropriations

According to financial rules, re-appropriation of funds can be made from one unit of appropriation to another unit within the same grant. The transfer of funds should be equal. Analysis of re-appropriation orders at grant level, in the test checked treasuries, however, revealed discrepancy of Rs.1.87 crore, due to incorrect capturing of the re-appropriation orders. The risk of allotments against the incorrect re-appropriations could not be ruled out.

Further, re-appropriations were made to such heads of account which were either not present in the budget literature or if present, there was no provision of funds.

In reply, the Government accepted (November 2007) the fact and stated that restrictions were being imposed in version 5.4.1.

3.4.6.2   Lack of validation checks

Validation checks are imposed to ensure that data entered in the system is accurate, within specified range and without duplication. However, following discrepancies in pension module were noticed in the test checked treasuries.

System of pension payments through the computerized system was not free from discrepancies

- In 4,605 cases, the Date of Joining (DOJ) was after the Date of Retirement (DOR) and in 1,810 cases DOJ was after the Date of Commencement of Pension (DOP). This indicated that such checks were not enforced in the system although specified in the SRS.

- In 259 cases, the Date of Birth (DOB) and the DOJ was found to be the same. In 3,503 cases, DOR was not recorded in case of superannuated pensioners whereas in 7,151 cases, Date of Death (DOD) was blank in case of family pensioners. In 1,385 cases, DOP was not recorded in case of superannuated pensioners.

- In 2113 cases, Pension Payment Orders (PPO) were found to be duplicate in the database. Sanctioning authority of the PPOs was also not captured in most of the cases.

- Bills amounting to Rs.51 lakh were passed from grant No. '62-Pension' without capturing the required 15 digit classification. Further, the scheme '2235-00-107' did not exist under grant number 62 but the system allowed passing of the bill.

In reply, the Government stated (November 2007) that validation of pensioners database and filling of incomplete pensioners' details were under progress.

3.4.6.3   Provision for correction of expenditure

As per the SRS, an option of correction of expenditure was available with the super user to modify the progressive expenditure of a DDO in case of any mistake committed by the operator while feeding the bill. The correction would update the progressive expenditure of the DDO and would not change the actual vouchers amount and head of account under which the correction was carried out. This led to different set of figures in different tables leading to mismatch between the DDOs expenditure figures and gross amount of bills passed against the DDOs.
In reply, the Government stated (November 2007) that corrective measure was being taken to maintain data consistency in version 5.4.1

Further, correction of expenditure undertaken to rectify the wrong booking should be equal to nullify the debit and deduct debit entries. However, in test checked treasuries, due to unequal correction entries, Rs.2.11 crore were lying unadjusted. The risk of reduction in actual expenditure by means of correction of expenditure could not be ruled out.

In reply, the Government stated (November 2007) that the same were being enforced in version 5.4.1.

3.4.7 Budget control through software

Budget control up to object head level was not effective

State budget passed by the legislature is provided in electronic form to all the treasuries. Expenditure incurred by the DDOs is controlled and restricted to the limit of allotments made to DDOs by the budget controlling officers and budget provision. However, analysis of data (2006-07) summarised at grant, scheme, object head of account on budgeted grant/heads[1] done distinctly on pay object heads[2] and non-pay object heads revealed that bills were passed in excess of the budget provisions and DDOs allotment. This was possible through correction of expenditure option as any decrease in the DDOs expenditure from one head of account to another would create availability of funds to the extent of decrease in the expenditure. Details are as under :

(Rs. in crore)

Bills passed in excess of budget provision				
No. of cases	**Object head of account**	**Budget provision**	**Gross amount of Bills passed**	**Excess over provision**
19	Non-pay	38.54	38.97	0.43
114	Pay-object	7.57	10.43	2.86
Bills passed in excess of DDO's allotment				
No. of cases	**Object head of account**	**DDOs Allotment**	**Gross amount of Bills passed**	**Excess over Allotment**
88	Non-pay	90.08	94.62	4.54
825	Pay-object	303.48	319.68	16.20

Thus, passing of bills in excess of the budget provisions and DDO's allotment led to ineffective budget control upto object head of account.

In reply, the Government stated (November 2007) that necessary safeguards against possible excess expenditure on account of corrections in the treasury at the instance of DDOs was taken in version 5.4.1 (applicable from June 2007). However, the system was still (November 2007) defective to the extent that such corrections carried out at the treasury level were not reported to AG (A&E) for incorporating in the accounts.

3.4.7.1 State level excess allotment over budget provision

Analysis of State data of 2006-07 made available by the FSD revealed that at the grant level, funds were allotted in excess over the budget provision. In 11 out of 95 grants against the provision of 6,165.08 crore, allotments of Rs. 6,219.24 crore were made thereby excess allotment of Rs. 54.16 crore. This showed that the feeding of the allotment orders was not mapped with the budget provisions. The situation was risk prone as no centralised budget control mechanism was in place.

The Government stated (November 2007) that excess allotment of funds reflected in the figures was due to the fact that re-appropriation orders were not captured in the FSD data. The reply is not tenable as analysis was done at the grant level and re-appropriations were made within the grant itself.

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[1] Excluding Grant No. 62-Pension, 21-Food & civil supplies, 7610-Loans & Advances
[2] (01-pay, 03-DA, 06-Other allowances, 38-interim relief, 50-dearness pay)

3.4.8   Non-mapping of business rules

3.4.8.1   Back dating of transactions

According to financial rules, no transaction could be executed after the close of the financial year. Analysis of allotment order table, however, revealed that in the test checked treasuries, allotment orders of Rs. 628.95 crore, re-appropriation orders of Rs. 250.61 crore and bills amounting to Rs. 1048.73 crore pertaining to financial year 2006-07 were entered in the system after 31 March 2007 (upto 8th of April)**.** It indicated that provisions of the financial rules were not incorporated in the system thereby allowing transactions even after close of the financial year. The option of closing the transaction date rests with the CTO/TO.

The Government stated (November 2007) that due to heavy rush of expenditure in March transactions were carried out even after 31 March.

3.4.8.2   Reports not generated

According to codal provisions, lapse deposit report of all deposits or balances lapsing after 31 March of each year were to be submitted to AG(A&E). However, no such report was generated by the system despite the data being available.

According to codal provisions, vouchers of refund of revenue are to be captured in 'Form-19' with details of the original revenue realised against which the refund was provided. However, such details were not captured nor any report generated.

In reply, the Government stated (November 2007) that generation of reports would be incorporated in the system.

3.4.8.3   Abstract Contingent (AC) and Detailed Contingent (DC) bills

As per rules, prior to passing of the AC bills, the TO is required to check the DDOs certificate that no DC bills are outstanding against the previous AC bills. However, neither flagging of the AC bills nor provision for capturing of the DDOs certificate was made. In absence of such provisions, no check was imposed by the system to restrict passing of subsequent AC bills of the DDOs.

In reply, the Government stated (November 2007) that provision for flagging of the AC bills would be incorporated.

3.4.9   Conclusion

Even after lapse of nine years of completion of computerisation of treasuries all over the State, the system was not working to its full potential as the incidence of errors was high and effective budgetary control upto the object head of account could not be exercised.

3.4.10 Recommendations

The Department should:

- develop proper documentation of the stage at which the computerization process stands today so that a trail of future changes was available.

- develop centralised budget control mechanism for effective control over budget provisions, re-appropriation of funds, allocation of funds to DDOs and expenditure thereof.

- take corrective measures expeditiously for proper validation of the pensioners' database.

- strengthen the physical access and logical access controls to avoid unauthorised access and manipulation in data.

- take steps to ensure mapping of all the business rules in the computerised environment.

The above points were referred to the Government in September 2007; replies received (November 2007) were incorporated at appropriate places in the review. Recommendations were accepted by the Government.