

## FINANCE DEPARTMENT

### 1.2 Computerisation of Directorate of Accounts

#### Highlights

*Various applications were developed by the National Informatics Centre for the department with a view to discharging of the work of treasuries efficiently, maintenance of GPF accounts, preparation of Appropriation and Finance accounts and accounting of Loans and Advances. The computerisation of the Directorate of Accounts was implemented without a comprehensive document and in the absence of a time-bound programme, several deficiencies were noticed in the operations and controls.*

⌚ Due to the absence of a time-bound programme and comprehensive documentation for the development of systems, several processes were left out during implementation.

*(Paragraph 1.2.6.6)*

⌚ During the data migration to the new GPFS, data cleaning was not performed, resulting in the transfer of obsolete, incomplete and inconsistent data.

*(Paragraph 1.2.6.7)*

⌚ Business Process Re-engineering was not carried out to bring in more efficient processes.

*(Paragraph 1.2.6.9)*

⌚ During the year 2007-08, in the case of nine classifications, the Budget Processing System enabled the surrender of grants by Rs 15.49 lakh, more than the total allocation in the year. Voucher dates in 76 bills amounting to Rs 1.66 crore preceded the date of entry of the bills.

*(Paragraph 1.2.6.14)*

⌚ Reliability of the system in preparation of accounts remained doubtful as manual interventions were resorted to in order to reconcile the errors.

*(Paragraph 1.2.6.16)*

⌚ A double allocation of Rs 2.68 crore was noticed in one treasury due to allocation in the physical mode instead of using the established Wide Area Network.

*(Paragraph 1.2.7.2)*

⌚ The system failed to check allocation of grants before passing of bills of Rs 1.84 crore in 2009-10 by the Margao branch.

*(Paragraph 1.2.7.3)*

#### 1.2.1 Introduction

The Director of Accounts (DOA) functions as the Central Pay and Accounts Officer of the Government of Goa and Principal Accounts Officer of the State of Goa. The Directorate performs functions such as passing of bills, sale of

stamps/stamp papers, finalisation of pension cases, issue of cheques and compilation of the Accounts of the Government of Goa. The responsibility of maintenance of individual General Provident Fund/Contributory Provident Fund Accounts of Government employees, authorisation and payment of pension to all retired Government employees, teachers of aided Institutions, Members of Legislative Assembly, freedom fighters etc. also devolves on the Directorate of Accounts.

### **1.2.2 Scheme of Computerisation**

Computerisation of the department commenced in 1992. National Informatics Centre (NIC) was engaged to carry out the development of the following different applications.

1. Budget Processing System (BPS)
2. Integrated Bill Processing System (IBPS)
3. Treasury Accounts System (TAS)
4. Compilation System (CS)
5. General Provident Fund System (GPFS)
6. Advances Management System (AMS)
7. Loans Management System (LMS)
8. Works Audit System (WAS)
9. Contributory Pension Scheme System (CPSS)
10. Transfer Entry System (TES)

Out of the above programmes, BPS, TAS and IBPS were integrated to facilitate compilation of monthly accounts. Rest of the systems were functioning independently. Objectives of the computerisation were not documented.

### **1.2.3 Audit Objectives**

The audit was undertaken with the objectives to assess whether

- \* the benefits of computerisation have been achieved as envisaged.
- \* the various software including the web based ones were designed properly with adequate controls and whether the development of the software was in line with the applicable rules.
- \* the general controls which include control over data centres' operation, system software development and maintenance, access security and application system development and maintenance have been properly effected.
- \* the application controls ensure completeness of data input as well as output.

#### **1.2.4 Organisational set up**

DOA at Panaji has a branch office at Margao. There are two district treasuries and 11<sup>9</sup> sub-treasuries. The pre-audit of bills is performed by Pay and Audit sections at Panaji and Margao. The Book Section, Broadsheet Section, GPF Sections, Works Audit, Loans and Advances Sections, Account Current and Deposit Section, Computer Section and Inspection Cell are located at Panaji.

#### **1.2.5 Audit coverage**

The functioning of the Budget Processing System (BPS), Integrated Bill Processing System (IBPS), Treasury Accounts System (TAS), Compilation System (CS), General Provident Fund System (GPFS), Advances Management System (AMS), Transfer Entry System (TES) and Loans Management System (LMS) were reviewed at the office of DOA, Panaji and in the two District treasuries. Data maintained under BPS, IBPS, TAS and GPFS for the period 2003-04 to 2009-10 was analysed using Computer Assisted Audit Techniques (CAAT).

#### **1.2.6 Audit findings**

Audit findings are classified under General Controls, System deficiencies, Information System Security, Application Controls and other topics of interest.

##### **General Controls**

General controls create the environment in which the Information System and related controls operate. If general controls are weak, reliability of other system controls also get diminished. The general controls were scrutinised to assess the impact on the efficiency, security or effectiveness of the system.

##### **1.2.6.1 Annual Maintenance Contract**

The department had engaged two different organisations for Annual Maintenance Contract (AMC) for maintenance of the computer systems and other accessories. Instead of grouping the maintenance agreements, during the June 2006 to January 2009, 14 different agreements were made with two vendors. Thus, there was artificial division of items of work, leading to staggered arrangements for AMC.

It was also noticed that no records of machine failures, date and time of booking complaints with AMC vendors, response time and completion time were being maintained, in the absence of which, proper monitoring of AMC could not be done by the Department.

The department agreed to the audit suggestion and stated that action to monitor the performance of AMC had been initiated (August 2009).

---

<sup>9</sup> Bicholim, Cancona, Mapusa, Margao, Pernem, Ponda, Quepem, Sanguem, Tiswadi, Valpoi and Vasco

### **1.2.6.2 Change Management**

The department did not follow a formal Change Management process of recording requests for changes and storing them for future reference. Changes were carried out on need basis with the help of the developer without leaving any trace.

The department admitted to the facts and agreed to systemise the changes (August 2009).

### **1.2.6.3 TAS- Authorisation of Refunds**

The refunds were physically traced as there was no provision in the TAS-receipt module to trace the progressive refunds against a receipt so as to restrict the refunds to the actual receipt. The department admitted the facts (August 2009).

### **1.2.6.4 Cancellation of bills**

In the absence of a provision to indicate cancellation of bills, manual reversal of entries were resorted to and the corresponding bill numbers were modified as 'zero'. However, reversal entries relating to three bills out of 989 bills cancelled during 2007-09 in Panaji branch were still to be made.

### **1.2.6.5 Adjustment of AC bills**

There was no in-built function in the IBPS to check adjustments of previously drawn Abstract Contingent (AC) bills, due to which the control over drawal of subsequent AC/advance bills could not be exercised efficiently. Hence, the controls were exercised manually. This resulted in delays in accounting of AC Bills through respective DC Bills. A total of 488 AC bills involving an amount of Rs 35.62 crore were awaiting adjustments. Out of these, 180 bills with an amount of Rs 12.31 crore, were pending for more than six months (April 2009).

## **System Deficiencies**

### **1.2.6.6 System Development Life Cycle (SDLC)**

A software development process is a structure imposed for the development of a software product. Documenting the design of software for the purpose of future maintenance and enhancement has to be done throughout the development of the software.

The evolutionary model of SDLC was followed by the department. Except for preparation of Software Requirement Specifications in some cases, there was a lack of documentation of the processes carried out at every stage of the SDLC. Development of the system became an ongoing process without any definite end in sight since the following functions and processes were left out of the computerisation process rendering the process of computerisation less

effective.

- \* Though the Detailed Appropriation Accounts were prepared using the Compilation System, Finance Accounts and Appropriation Accounts of the Government of Goa continued to be prepared manually.
- \* Pre-audit of bills were performed manually instead of through the system to enable monitoring of passed or objected bills and verification of specimen signatures of Drawing and Disbursing Officers.
- \* Personal Ledger Accounts continued to be maintained manually.
- \* 2,174 transactions relating to advances could not be entered in time into the AMS during the period 2004-05 to 2008-09, for want of account references, misclassification. Manual records were being maintained for adjustment through transfer entries at a later date.
- \* DDO-wise reconciliation of expenditure could not be made due to non-availability of a DDO-wise Budget.

Apart from the above functions and processes, the Account Current and Deposit System and Pension System were under development and testing.

The department replied that the legacy systems were upgraded to web-based systems in 2003-04 and it was envisaged to integrate major systems under operation in the department. It was further stated that upgradation, development and implementation of the new system was carried out in a phased manner. The department agreed to computerise all the above mentioned functions (August 2009).

However, the absence of a planned approach resulted in systems not being stabilized and being developed without any time-bound programme. A review of the development of the system may be carried out on “as is” basis in order to ascertain development and necessary documentation of the system.

#### ***1.2.6.7 Data migration from legacy system***

Results of data migration are subjected to data verification to determine whether data is accurately translated, is complete and supports processes in the new system.

The GPF System was installed in the year 2005, replacing the legacy system. On analyzing the data from the new GPF system, it was noticed that out of 49,465 subscribers

- \* dates of birth were not recorded in 6,998 cases.
- \* dates of joining were not recorded in 12,444 cases.
- \* nominations were not recorded in 43,663 cases.
- \* age of subscribers was indicated below 18 years (minimum age of entry in government service) in 70 cases, out of which future dates were indicated as the dates of birth in 49 cases.

- \* legacy opening balances of GPF account in respect of 163 subscribers continued as negative balances for two successive years i.e. 2007 and 2008 without rectification.

The redundant and incomplete information was observed, since automated and manual data cleaning was not performed during data migration to improve the data quality.

The department replied that the entries in system would be updated and negative balances migrated from the legacy system would be cleared (August 2009).

#### **1.2.6.8 Implementation of the systems**

The TAS-Stamp module and LMS, which were developed to address activities related to accounting of Stamps, Loans of Government of Goa and incidental transactions were yet to be implemented, though installed during October 2004 and July 2006 respectively and the activities continued to be maintained in manual system. Hence, efforts and resources employed to develop the systems remained unfruitful.

The department admitted the facts and agreed to implement the system (August 2009).

#### **1.2.6.9 Non-adoption of BPR resulted in delayed recording of transactions**

Business Process Re-engineering (BPR) is the radical re-design of an organisation's business processes.

The following instances were observed where non-adoption of BPR resulted in delayed completion of transactions.

- \* Schedules of deductions relating to GPF subscriptions and refund of advances were being entered in the GPF System and AM System after delays of three months. Possibility of avoiding these delays was not explored by re-arranging the function of updating individual accounts as soon as the bills were passed.
- \* The entry of bills in IBPS were delayed due to various stages of receiving, sorting and sending bills to the relevant sections for further processing of the bills. These delays could have been avoided by entering the bills in the system immediately on receipt. The automation of the process of issuing token numbers in respect of local bills using bar coding system could be explored to enable speedy processing of bills.
- \* Transfer entries to rectify mistakes in classification were still being processed manually and only the final outcome was being recorded in TE System. Possibility of automating the TE process was not explored to avoid manual intervention which is prone to error.

The department replied that a new system named 'Accounts-Online' had since

been proposed to replace the existing system, which would take care of all the deficiencies pointed out (August 2009).

### **Information System Security**

#### ***1.2.6.10 Logical access controls***

Logical access controls are a system of measures and procedures aimed at protecting computer resources against unauthorised access attempts.

It was noticed that the organization was yet to formulate a password policy. In the absence of the same, it was noticed that three out of 71 users had not been assigned any password. There was no restriction on the length of passwords.

The department agreed to formulate a password policy (August 2009).

#### ***1.2.6.11 Authorisation levels***

The management and personnel policy in respect of computerization activities was still to be prepared. Identification of duties and responsibilities of the staff were not detailed. Access to the system was also controlled and monitored in an *ad hoc* manner.

The rights of Data Base Administrator and System Administrator for all the applications and database were allotted to temporary programmers in the absence of any designated system administrator or database administrator.

In the absence of sufficient hardware, the bills passed by the internal auditors during pre-audit were entered by data entry clerks *en masse*, instead of by the bill auditors themselves. Thus the bill particulars were entered without leaving any audit trail.

It was also observed that the user entering data was seen carrying out the modifications also against incorrect entries due to sharing of passwords, thus compromising the logical access controls built in the system.

The department agreed to formulate user administration and also stated that bill auditors would also be provided access to the system (August 2009).

#### ***1.2.6.12 Anti-virus protection***

Anti-virus software was purchased at a cost of Rs 1.18 lakh in May 2006. However, it was noticed that there was continued use of different anti-virus software other than the purchased one. It was also noticed that 19 out of 125 systems in office of DOA at Panaji could not use the purchased anti-virus since the systems did not meet the requirements for procured software.

The department admitted the facts and agreed to replace the old systems (August 2009).

## **Application Controls**

### **1.2.6.13 Input controls**

Input controls ensure completeness, correctness and accuracy of data entered into the system.

The following discrepancies were noticed in the enforcement of input controls in the GPF system.

- i. GPF data contained 13 records in which the GPF number was recorded as zero.
- ii. The trend of entry of records was not uniform. No contributions were recorded in the system in the month of May and June 2008. However, in March 2008 there were an unusually high number of entries i.e. 30.6 *per cent*.
- iii. In 46,667 records, the dates of application for opening GPF accounts had not been entered and the system accepted zero values.
- iv. In all records, the 'date of retirement' column was not entered, in the absence of which mandatory stoppage of GPF subscriptions three months prior to retirement could not be monitored through the system.
- v. There was a system of generating diary numbers when applications for GPF withdrawal and advances were received. It was seen that there were 212 entries of advances which were processed without diary numbers indicating lack of input control in this regard.

The department replied that the details of subscribers would be updated and also stated that the shortcomings pointed out would be addressed (August 2009).

### **1.2.6.14 Validation checks**

Data validation is the process of ensuring that a programme operates on clean, correct and useful data by use of routines called validation rules. The simplest validation verifies that the characters provided come from a valid set. The following discrepancies due to lack of validation checks were noticed.

## **GPFS**

- i. In 158 records, entry dates of GPF subscriptions preceded those of contribution months. One hundred fifty one entries were made on 1 January 2002 for the contribution for the month of June 2008.
- ii. In four instances, the system permitted the entry date of application preceding the date of application.
- iii. The advances from GPF are repayable on monthly basis. In 1,687 cases, the advance amounts did not match the repayable amounts. In 208 records, the amount repayable was less than the advance sanctioned. In 200 records, where the sanction was for an advance,



zero instalments were recorded. In one instance, the system allowed 150 instalments of Rs 1,000 for repayment of GPF advance of Rs 15,000.

- iv. In another case of GPF advance, the cheque date preceded the entry date.

The department replied that necessary constraints would be incorporated to address the shortcomings pointed out (August 2009).

### ***BPS***

- i. As a general rule, in any financial year, cumulative surrenders of grants cannot exceed cumulative allocations and there cannot be two original allocations of grants. In the year 2007-08 in case of nine classifications, respective cumulative surrender of grants as recorded in BPS was in excess by Rs 15.49 lakh, than the total grants allocated in the year. In the test data entry, two original allocations of grants were accepted.

The department admitted the facts (August 2009).

- ii. Budget heads available in the BPS for the year, 2009-10 were cross-checked with the list of classifications published by the Controller General of Accounts (CGA)<sup>10</sup>. It was noticed that allocations amounting to Rs 13.11 crore under four classifications using those sub-major heads which were not in the list published by CGA were made in the system, indicating absence of validation checks in this regard with respect to Heads of accounts as per CGA.

### ***IBPS***

According to the sequence followed in the processing of bills, the voucher date should be after or at least the same date as that of bill entry date. However, it was observed that in the case of 76 bills involving an amount of Rs 1.66 crore, voucher dates preceded entry dates of bills during the period 2007-09.

The department admitted the facts (August 2009).

#### ***1.2.6.15 Mapping of business rules***

By arranging to follow business rules through computerised processes, a direct correlation between computerised systems and business activities is created, increasing the level of governance. Mapping business rules to process activities and decision points, ensures process integrity. The following instances of violation of business rules were noticed.

---

<sup>10</sup> Computerised list of classifications published by Controller General of Accounts is available on website of CGA and updated on quarterly basis

### **GPFS**

Rule 15(1) (C) of GPF rules permit withdrawal without stating any reason in the last 12 months before the date of superannuation. However, in 33 cases, withdrawal under Rule 15(1)(C) of GPF rules was allowed on more than one occasion. In 48 records, withdrawals were allowed without quoting any rule.

The following instances of violation of business rules were also noticed during analysis with test data.

- \* The system allowed increase in subscription more than two times in a year and reduction more than once. Subscriptions in excess of total emoluments were accepted by the system. The system also allowed nomination entries for more than 100 *per cent* of the accumulated balance.
- \* Withdrawals were allowed to the extent of 100 *per cent* of the total of the balance at credit and interest due upto the current month, whereas, the maximum withdrawal allowed under the rule was only 90 *per cent* of the balance at credit.

### **BPS**

- \* While preparing the accounts of the expenditure from the Contingency Fund, the necessary allocation has to be first made to the respective head before recording such expenditure. The major headwise report of expenditure generated from BPS, revealed that the system allowed recording of expenditure of Rs 1.16 crore during the year 2008-09 to the respective heads even before allocations were made from the Contingency Fund.

### **Output Controls**

Output controls ensure that the output is complete, accurate and timely and is correctly distributed.

#### ***1.2.6.16 Preparation of Classified payments Register and Volume X***

Volume X is a monthly document prepared from classified payments based on which the Finance Account is prepared.

It was observed during scrutiny of Volume X and Classified Payments Register (CPR) for the month of March (P) 2009, that there was difference of Rs five lakh in the grand total of both. These errors crept in due to incomplete information about expenditure or deduction of expenditure, regarding categorising in Plan or Non Plan. The reconciliation of the same is done manually which was against good practices. The reliability of the system in giving accurate and correct reports for preparation of accounts thus remained doubtful.

The department agreed to carry out necessary modifications (August 2009).

### ***1.2.6.17 Cancellation of time barred cheques***

Rule 46 of the Government of Goa (Receipt and Payments) Rules, 1997 stipulated that a cheque remaining unpaid for six months after the month of its issue should be cancelled and the amount should be written back in the accounts.

The report on uncashed cheques for the period 2005-06 to 2007-08 displayed that there were 4,125 cheques worth Rs 7.52 crore which were recorded as not encashed. Utilities available in the system were not used on time to update the data for complying with the provisions of rules.

The department agreed to review the cases and carry out necessary corrective action (August 2009).

## **1.2.7 Other topics of interest**

### ***1.2.7.1 System failure in adoption of date***

The system is designed to adopt the system dates as voucher dates. However, it was noticed that to accommodate a bill amounting to Rs 13.57 lakh received after 31 March 2009 in the financial year 2008-09, the voucher date was changed to 31 March 2009, by changing the system date while passing the bill. The department admitted the facts (August 2009).

### ***1.2.7.2 Budget allotment***

At the beginning of the financial year, allocation and further adjustments of the original budget relating to the Margao Branch was carried out manually by the Panaji Branch of Directorate of Accounts.

On scrutiny of such transactions, it was noticed that Rs 2.68 crore allotted to the Margao branch, in separate instances, was recorded twice in 2008-09. The mistake was rectified after delays ranging from one day to 10 months. During this period, the allocation in one case was exceeded by Rs 1.12 lakh. Use of established Wide Area Network (WAN) connectivity available between two branches would have avoided such errors.

The department admitted the facts and agreed to utilise the WAN (August 2009).

### ***1.2.7.3 Passing of bills worth Rs 1.84 crore before allocation of grants to the treasury***

At the beginning of the financial year, the department did not directly upload the budget allocations in respect of the Margao Branch to its servers but as per the requirements, the Pay and Audit sections of Panaji Branch channelled a portion of the total funds to the Margao Branch.

During the test check of records at Margao Branch for the year 2009-10, it was observed that there were 110 bills from three different demands, worth Rs 1.84

crore which were passed before allocation of grants. These bills pertained to various items of expenses including salaries, advances, office expenses, arrears, payments towards professional services etc. System controls were poorly designed to restrict irregular transactions by treasuries.

The department admitted (August 2009) that only the salary bills for the month of April every year were allowed to be passed without waiting for allocation of budget in the system. However, it was noticed that bills other than salary bills were also passed through the system without budget allocation.

### **1.2.8 Conclusion**

The computerisation process was going on without settlement and stabilisation of the systems. During the development of systems, several functions and processes remained outside the purview of computerisation. Business Process Re-engineering was not carried out to achieve efficient processing of work. Appropriate controls and security mechanisms were not evolved, resulting in running of the systems, maintenance of the database and applications, in an unsecured environment. Due to inadequate application of business rules, scope for modification in data and other deficiencies in input, processing and output controls, reliability of applications in giving reasonably correct results was doubtful.

### **1.2.9 Recommendations**

- ❧ Development of a comprehensive database of employees, DDOs and pensioners for utilisation across applications should be considered on a priority basis.
- ❧ Study of processes may be carried out to bring in efficient and effective processes to carry out BPR.
- ❧ Installed applications TAS-Stamps and LMS, should be put to use without any delay after assigning application based training to staff.
- ❧ Scope for automating more functions and processes needs to be identified and explored especially for functions performed in Book section where voluminous figure work is carried out physically.
- ❧ Perspective plan and strategic plan should be developed and implemented.
- ❧ A mechanism to oversee implementation of logical and physical access controls, and authorisation levels, should be put in place. There is need for reorganisation of the IT wing with clearly identified duties and responsibilities.
- ❧ The established WAN should be used for data transfer between branches rather than data transfer in the physical mode.