TWELFTH KERALA LEGISLATIVE ASSEMBLY

COMMITTEE
ON
PUBLIC ACCOUNTS
(2008-2011)

ONE HUNDRED AND SEVENTEENTH REPORT

(Presented on 20th July, 2010)

SECRETARIAT OF THE KERALA LEGISLATURE
THIRUVANANTHAPURAM
2010

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On

Paragraphs relating to General Administration and Information Technology Departments contained in the Reports of Comptroller and Auditor General of India for the years 31st March 2005 (Civil), 31st March 2007 (Civil)

911/2010.

CONTENTS

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INTRODUCTION

I, the Chairman, Committee on Public Accounts having been authorised by the Committee to present this Report on their behalf present the One Hundred and Seventeenth Report on paragraphs relating to General Administration and Information Technology Departments contained in the Reports of the Comptroller and Auditor General of India for the years ended 31st March, 2005 (Civil) and 31st March, 2007 (Civil).

The Reports of the Comptroller and Auditor General of India for the years ended 31st March 2005 (Civil) and 31st March, 2007 (Civil) were laid on the Table of the House on 16th February, 2006 and 26th February 2008 resepctively.

The Committee considered and finalised this Report at the meeting held on 23rd June 2010.

The Committee place on record their appreciation of the assistance rendered to them by the Accountant General in the examination of the Audit Report.

ARYADAN MUHAMMED,

Chairman,
Committee on Public Accounts.

Thiruvananthapuram,
20th July, 2010.

REPORT

GENERAL ADMINISTRATION AND

INFORMATION TECHNOLOGY DEPARTMENTS

AUDIT PARAGRAPH

Recruitment Application Processing System in Kerala Public Service Commission (REACT)

Highlights

- Investment of Rs.66.94 lakh on IT assets in Phase II became redundant.
- Software relating to Phase III of computerisation costing Rs.21.60 lakh was still under development since January 2004 resulting in idling of hardware costing Rs.47.57 lakh.
- There was a delay of six years in starting Optical Mark Reader valuation due to lack of proper IT strategy.
- Underutilization of Optical Mark Reader machines was noticed.
- The present system of valuation of answer sheets was vulnerable to risk of loss of data and data integrity.

Introduction

The Kerala Public Service Commission (KPSC) is a body constituted under Article 315 of the Constitution of India to conduct examinations for appointment to various services of the State Government and advise the Government on matters relating to methods of recruitment and all disciplinary matters affecting the Government servants, among other things. The Commission also discharges functions relating to services and posts in the Government owned companies, corporations, local bodies and certain co-operative institutions in the State.

Organisational set up

The Commission consisting of a Chairman and 14[*] members has its Head Office at Thiruvananthapuram, three Regional Offices[**] and 14 District Offices. The administrative functions of the Offices of the Commission are under the

[*] Number of members increased to 19 in 2005

[**] Kollam, Ernakulam and Kozhikode

charge of the Secretary assisted by Additional Secretaries, Joint Secretaries, Deputy Secretaries and other supporting staff.

Introduction of computerisation in KPSC

In order to clear the huge backlog of work, minimise delay in processing of applications and publish rank-list immediately after the examinations, the Commission resorted to computerisation by implementing the Recruitment Application Processing System (REACT) in March 2001.

Though the Commission initiated steps for limited computerisation of recruitment process in February 1993, it was in April 2000, based on the recommendations of the Technical Committee, that CMC Limited was short-listed and a work order was issued (June 2000) to develop application software with system study, beta testing, software implementation, training and source code.

The Software (REACT) was developed in Unix platform using the RDBMS package Oracle, with Visual Basic as its front-end.

While phase I had two parts, the first part of development of the software covered the pre-examination process at a cost of Rs. 75 lakh, the second part covered the post-examination process (up to generation of rank list) at a cost of Rs. 2.50 lakh.

Phase II of computerisation relating to replication of software to facilitate district level processing of applications cost Rs. One lakh.

Phase III of computerisation-covered automation of the functions of Recruitment, Examination and Advice Sections and networking of Head Office, Regional Offices and District Offices. The software was to be developed by CMC Limited at an estimated cost of Rs. 21.60 lakh and the same was under development since January 2004 and as of May 2005, nine modules had been developed and were at testing stage.

The Commission had incurred an expenditure of Rs. 5.36 crore as of March 2005 on computerisation (including Rs. 2.45 crore on procurement of hardware and software, Rs. 0.46 crore on printing Optical Mark Reader (OMR) answer sheets and Rs. 2.45 crore on printing application forms).

AUDIT OBJECTIVES

IT audit of REACT was conducted to assess the achievement of objectives of computerisation as well as to assess the adequacy of IT controls to ensure confidentiality, integrity and availability of data, programmes and systems.

AUDIT COVERAGE

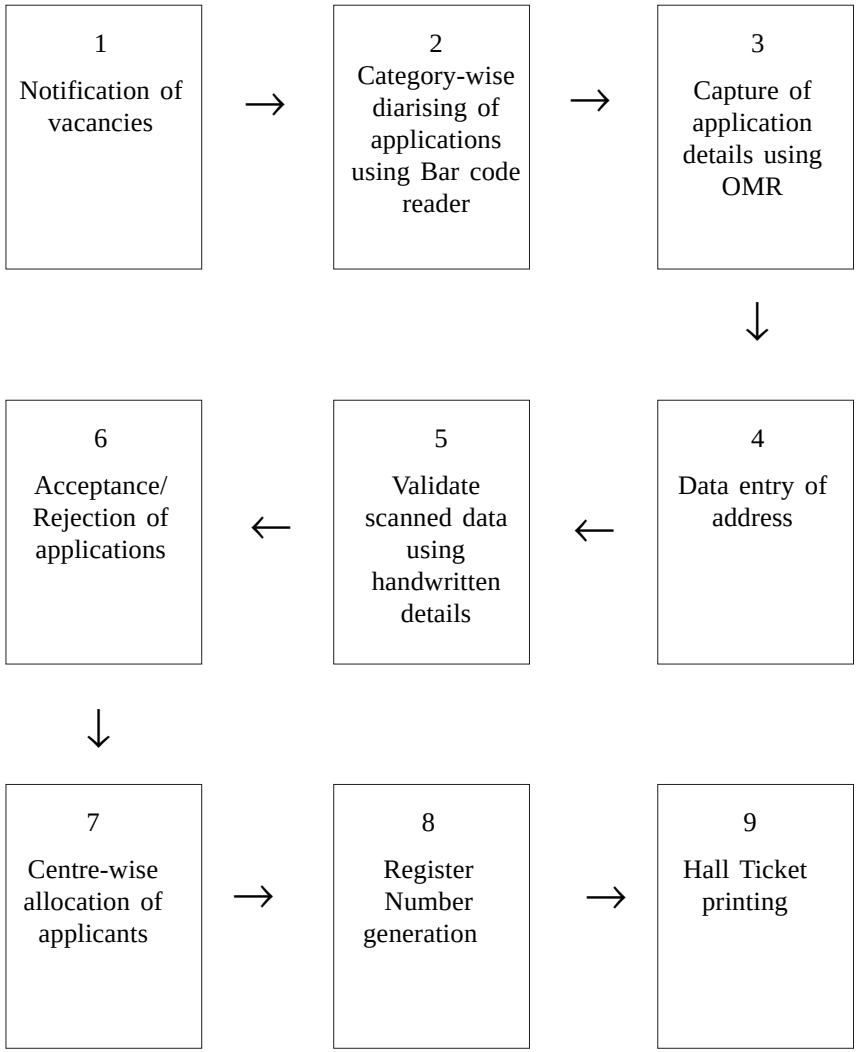
The IT audit conducted during July-October 2004 covered the Headquarters Office, the Regional Office at Kollam and the District Offices at Kollam and Thiruvananthapuram for the period from April 2000 to March 2004. As the Commission did not furnish the data relating to application processing for audit

scrutiny, citing confidentiality reasons, the data could not be analysed to assess its integrity and accuracy.

System Development

Partial Utilisation of REACT Phase I—Part I

The first part of software development covered the pre-examination process as under.



But REACT Phase I Part I was not used, as intended, on the ground that the candidates who were not well versed in OMR application would commit a lot of mistakes and this would lead to rejection of substantial number of applications during scanning. Instead, the Commission resorted to data entry of applications, which was not justified, for the following reasons:

- According to System Requirement Specification and User Manual, the software was developed to capture application particulars through OMR application processing. The data entry module was also provided for entering the particulars pertaining to old pending applications and applications rejected by the OMR machine. However, the Commission went ahead with data entry process of all applications. There was no record as to how many applications were scanned, the percentage of rejection, etc, before deciding that the OMR scanning was not possible.
- The decision to resort to manual data of applications in the second phase of computerisation resulted in unnecessary expenditure of Rs. 66.94 lakh towards purchase and installation of hardware and software at District and Regional Offices for data entry under Phase II.
- Importantly non-utilisation of the OMR scanner, forcing manual data entry of application data had resulted in the postponement of the examination scheduled in June 2004 by 2 months. Hence, the very objective of computerisation could not be achieved.
- By resorting to District level processing of applications at 17 locations without proper feasibility study, instead of having a centralized database, the Commission was exposing the system to risk for its integrity and security of data as well as scalability.

The Commission stated (September 2005) that when 81,789 applications of a particular post were scanned as a test case about 22 per cent had to be rejected due to defective filling up of applications and the Commission felt this as an injustice to the applicants. This was not tenable as there was no record of scanning of 81,789 applications either in the OMR log book or in the AMU stock register.

As regards centralised database, the Commission stated (August 2005) that District Offices were functioning for attending to recruitment activities of posts earmarked for district-wise selections. It was further stated that the centralised database would require leased line facility which would lead to access to data by hackers/outsiders. But the reply was also not tenable as the Commission was

contemplating Web-based application for which centralised database is a must. Moreover, it was observed that District Offices resort to transfer of data through internet and that too in non-encrypted format.

Non-utilisation of REACT Phase I—Part II

Though answer sheets were being scanned using OMR from February 2001 onwards, REACT Phase I Part II covering the post-examination process was not at all put to use to generate shortlist of candidates and the rank list. Instead, an application developed in-house was used to generate the short list from the database created by OMR system. The Commission stated (September 2005) that preparation of rank list was the most important and sensitive part of recruitment procedure. This exercise took more time than expected and hence the delay in finalising and putting the programme into use. The delay in using the software after testing and acceptance was not justified as the objective of computerisation was not achieved despite making a large investment.

Delay in Development of Software (Phase III) by CMC Limited

According to the proposal of CMC Limited (October 2003) which was accepted (January 2004), CMC was to fully develop the software for office automation (Phase III) within 6 months. Though more than a year has elapsed, the development was still at the System Recruitment Specification (SRS) stage. As a result, the hardware costing Rs. 47.57 lakh procured during March 2004 was idling for more than a year.

The Commission stated (September 2005) that the delay in development of software was due to the change in the scope of the Project by adding more and more modules to the System Requirement Specification (SRS) and the hardware purchased was never kept idle but was utilised for checking and testing of the software. The reply is not acceptable because the scope of the project was to be finalised at the User Requirement Stage. Further, the argument that the hardware was utilised for testing and was never kept idle was not tenable as the hardware was purchased more than a year ahead of the development of software.

OMR Valuation of Answer Sheets

Delay in Procurement of OMR

Based on Government's sanction (August 1995) for the limited computerisation, it was decided to introduce OMR type answer sheets, to conduct various examinations. However, the first OMR procured (1997) could not be used and hence returned (May 1998) to the vendor. Another OMR procured (November 1999) was used to scan OMR answer sheets only from 2001, thus resulting in a delay of 6 years in procuring and using OMR.

Moreover, the Commission did not utilize the OMR machines for application processing, thus necessitating Phase II at District and Regional offices. Thus, substantial delay in OMR valuation and non-utilisation of the software to scan the applications indicated the lack of a clear IT strategy.

Under Utilisation of OMR Machines

Out of 1096 posts for which examinations were conducted during 2001-04, OMR answer sheets were used only for 114 posts (10 per cent). The Secretary stated (August 2005) that selection to certain posts could not be conducted by objective type examination. It was further stated that the number of posts for which objective type examination was conducted was immaterial, as 80 per cent of the candidates had appeared for OMR type tests.

While procuring the OMR machines, it was expected that the OMR machines could scan 5000 sheets per hour (i.e. 30,000 sheets a day of 6 hours utilisation). However, a scrutiny of the logbook revealed that OMRs were used to scan only 3000 sheets a day. Between February 2001 and July 2004, only 96 lakh sheets (48 lakh each of Part A and Part B) were scanned and no application form was scanned. The Commission stated (September 2005) that scanning of answer sheets involved different stages and hence it would not be possible to scan 30,000 answer sheets even with twenty-four hours working. The reply is not acceptable as scanning speed of the machine was 5000 answer sheets per hour as per the User Manual and the maximum output per day was computed reckoning the number of working hours as six per day keeping in view the time needed for the different stages. Evidently the failure to scan OMR applications mainly contributed to underutilisation of OMR.

Failure to mitigate risks in OMR scanning of answer sheets

OMR answer sheet is designed in two parts—Registration Number coding sheet (Part A) and Answer sheet Part (B) with common barcode number which can be deciphered only by using a barcode reader. After the examination, these parts are so separated that half the barcode appears in each part.

Valuation of OMR based answer sheet involved five stages—viz.,

- valuation of answer sheet Part B using OMR
- generation of mark range of candidates and onward transmission to the Commission for appropriate decision regarding cut off mark.
- decoding of Register Number Part (A) containing identification details of candidates,
- decoding of mark data (correlating Part A and Part B using barcode) and
- printing of mark list.

As per instructions (September 2002) governing the OMR scanning of answer sheets, the answer sheets (Part B) are packed in bundles of 500. After noting the number of each bundle these are to be transferred to Deputy Secretary (Examination) for scanning. After completing the scanning of answer sheets of all candidates, the mark range is generated and submitted to the Commission. The System Analyst is to maintain a Log Register showing bundle-wise scanning of scripts and the sealed floppy/CD containing mark data is to be kept under safe custody. Thereafter, the Register Number i.e. Part A is to be scanned, decoded and correlated with the already scanned Part B. The short list is to be generated only after clearance by the Commission. CD/floppy containing the mark data and the identification details is handed over for safe custody to the officer designated.

A scrutiny of the logbook revealed the following deficiencies :

- The sequence of first scanning Part B containing the answers ; then providing the marks range to the Commission to decide the cut off marks and then only scanning Part A containing identifying details of the candidates to generate the shortlist is very vital to maintain confidentiality and to eliminate any kind of tampering. However, instances were noticed in Audit whereby this sequence was not strictly adhered to by the Commission. Audit noticed that in the examination for the post of Manager, Khadi Gramodyoga Bhavan held on 31 October 2001, 12, 151 Part B answer sheets were scanned during April 2002. Then in June 2002, 12, 377 Part A registration coding sheets were scanned. Later 13 more answer sheets were scanned during December 2002. Reconciliation in audit revealed that there exists a discrepancy between the number of Part A registration coding sheets that was scanned and number of Part B answering sheets that were scanned.

- Scanned data was susceptible to modification, using Edit facility in dBase, without any audit trail. Moreover, there was no system of file comparison to detect variations in file size and field values.

- Test check showed that there were 123 corrections in barcode and six corrections in Register Numbers on account of duplication (between February 2000 and November 2001). Any mismatch of Part A and Part B at this stage would result in ineligible persons being selected or eligible persons not getting selected. There was no documentation to show how the Commission ensured that the new barcode number allotted for Part A was the same for the corresponding Part B.

- Of the 395079 answer sheets scanned between February and November 2001, 3024 answer sheets were rejected. There was no documented procedures regarding method of valuation of rejected cases and treatment of such cases to ensure uniformity in valuation.
- At the stages of determining the mark range and short-listing of the candidates, the data was copied to a CD/floppy and the data in the hard disk was deleted later. There was no mechanism to ensure that the data/shortlist was finally deleted from the hard disk. Moreover, keeping backups in easily corruptible media like floppies and fragile media like CDs poses a risk to recovery of data when needed without scanning the answer sheets again.

The Commission stated (September 2005) that there was no risk for the System as there were specific instructions for each and every minute item of work. The reply is silent on controls adopted for reconciliation of number of Part A and B answer sheets scanned and to avoid mismatch of barcode numbers in the event of duplication.

General IT Controls

Absence of Business Continuity Plan Controls

As part of business continuity plans, the organisation mirrors the database pertaining to the application forms in REACT into the second hard disk, inside the same system, instead of mirroring it in an off-site location or backing it up in any media for storing it off-site. The adopted procedure was faulty, as was evident from the experience in the District Office, Kollam where both the mirrored copy and hard disk were corrupted, resulting in loss of data during May 2004. Despite this, the organisation was yet to change the existing system of backing up the data.

In response to an audit query (February 2005), the Secretary stated (May 2005) that CD writers had since been installed in District and Regional Offices for backup. The reply is not tenable as no off-site backup was contemplated.

Absence of Physical and Logical Access Controls

Effective functioning of server requires that it is kept in a cool, dust free environment, with physical access restrictions. However, it was seen that no such provision exists in District Office, Thiruvananthapuram, where the server containing the application data and the nodes were kept in a hall near the entrance, without any access restrictions. The Commission stated (September 2005) that the execution of civil and electrical works took more time and hence

the computers were placed in an open space. Subsequently, they had been relocated to safe and dust free locations.

The organisation did not have a password policy, though logical access controls were provided at application level. The Secretary stated (May 2005) that necessary guidelines had since been given to the staff during training and that access controls were being enforced. A Password Policy was needed for effective control in a system claimed to be of utmost confidentiality by the Commission.

Conclusions

The KPSC lacked a clear IT strategy for implementation of Information Technology in its operations which resulted in spending huge amounts without getting the full intended benefits. The process of scanning on which depend the results and the fate of candidates, is not made completely immune from avoidable human intervention. As per the details furnished (August 2005) by the Secretary, the pendency of application had been brought down from 83.50 lakh (1999-2000) to 37.32 lakh (2003-04). As there was substantial increase in the number of applications disposed of during 2002-03 (35.71 lakh) and 2003-04 (36.52 lakh) due to the OMR processing of answer sheets, it is evident that the pendency can be brought down further through effective utilisation of REACT and scanning of applications in OMR format.

Recommendations

- ❖ Incomplete maintenance of log book relating to scanning of answer sheets is a risk area which should be immediately rectified.
- ❖ Proper IT strategy may be framed covering organizational aspects and use of IT assets in order to have better monitoring of the IT processes and proper utilisation of automated solution like REACT.
- ❖ IT Security Policy including physical and logical access control may be devised, documented and implemented.
- ❖ The Commission may evolve an effective backup policy after doing a risk analysis.

[Paragraph 3.3—contained in the Report of the Comptroller and Auditor General of India for the year ended 31 March 2005 (Civil)]

Notes received from Government on the paragraph are included as Appendix II.

Regarding the audit objection relating to the computerisation in Kerala Public Service Commission, the Additional Chief Secretary, General Administration and Fisheries Departments explained that the Accountant General had raised the objections in respect of the transition stage while introducing the OMR system and scanning of marks through computer. The Committee enquired whether the defects pointed out by the Accountant General were rectified. The Additional Chief Secretary replied in the affirmative. The Secretary, Kerala Public Service Commission added that the OMR usage implemented in Kerala Public Service Commission was successful even though there was protest raised by the employees against computerisation. When the Committee asked whether PSC was included in the offices where SPARK system was introduced, the Secretary, KPSC informed that SPARK was not introduced in PSC and they were mainly focusing in recruitment. The marks obtained by the candidates would be published in website. To the question of the Committee about the system introduced to verify the defects occurred if any, the Secretary, KPSC replied that accuracy was kept in the case of marks obtained by candidates and there would be no chance for discrepancy. The Committee enquired about the developers of software used in PSC. The Secretary, KPSC stated that the same was developed by the CMC Ltd. and later on the system was started to be managed by the System Analysts in KPSC. After that, the Committee asked about the Research and Development wing in PSC. The Secretary, KPSC informed that the R & D wing in PSC was very effective. Every staff in PSC were trained and the post of System Analysts were provided in all District Offices. So the computerisation could be done more perfectly and effectively. To the Committee's query as to whether calling of applications, issue of hall tickets etc. were being done through Internet, the Secretary, KPSC informed that hall tickets for the competitive examination to the post of Lecturer (Anatomy) in Medical Education Department was issued through Internet as an experimental step. But it was yet to be decided by the Commission whether this system should be made applicable to all examinations.

2. To the query of the Committee regarding the reason for the delay of about 6 years in using OMR, the Secretary, KPSC replied that there were protest from the part of service organisations against computerisation.

3. Thereafter the Committee observed that the hardware purchased were used for testing even before the development of software. The Committee viewed this very seriously and asked for the reasons. The Secretary, Kerala Public Service Commission replied that for avoiding delay in computerisation, the Commission had decided to install Hardware. The Committee wanted to know the authority responsible for the lapse. The Additional Chief Secretary,

General Administration and Fisheries Departments emphatically stated that lack of proper preparation was the reason for this lapse. He added that he would not justify the statement of the Secretary, Kerala Public Service Commission that the delay was occurred due to the improper planning and lack of preparation though it was the actual fact.

4. The Committee pointed out the delay occurred in developing the software for phase III computerisation and asked to give reason for that. The Secretary, Kerala Public Service Commission explained that since the computerisation in Kerala Public Service Commission was of a complex nature, there would have been chances for errors while developing the software. He termed this as practical difficulties instead of delay. Disagreeing with this opinion, the Committee strongly asked to submit reason if any for the delay in introducing the complete system. The Secretary, Kerala Public Service Commission replied that the computerisation was a complex procedure. The work assigned could not be completed within the time limit due to some technical reasons.

5. Then the Committee pointed out that the Public Service Commission had followed a wrong procedure. The scanning of Part A and Part B of OMR sheet would be done separately. The failure to scan OMR applications mainly contributed to lose the confidentiality of the results. The Additional Secretary, Kerala Public Service Commission who assisted the witness replied that the scanning of Part A was done only after getting an order from the Commission. Finally, the number of Part A and Part B would be got tallied. Thereafter, the Committee enquired about the discrepancies noticed in the scrutiny of log book. The Additional Secretary, Kerala Public Service Commission answered that it was due to a clerical error crept at the initial stage of scanning. Later, total number of application received, rejected etc. were entered in the log book correctly.

6. The Committee wanted to know the reason for delay in publishing results of examinations. The Joint Secretary, Public Service Commission answered that the delay was due to the shortage of staff strength. Even though the number of applications for every post called for by the Public Service Commission were increasing day-by-day, adequate number of staff were not provided for handling the scrutiny of applications. The Committee commented that the computerisation would lessen the number of staff. Moreover, staff strength is not a factor in this issue. The Additional Chief Secretary, General Administration and Fisheries Departments informed that they were proposing to shorten the total period taken for the process from the date of application to the recruitment from one year to six months. Shortage of staff was another issue for which correspondences with the Government was already there.

7. Thereafter, the Committee asked about the password policy, if any, being followed in the Public Service Commission. The System Analyst, Kerala Public Service Commission explained that System Supervisor is the authority to keep the password. It had been notified to change the password frequently and to keep it with the Office Head in a sealed cover in order to keep the utmost confidentiality of the Commission.

8. The Committee desired to know whether the recommendations put forth in the audit paragraph were carried out. To the recommendations of audit on subjects like incomplete maintenance of log book relating to scanning of answer sheets, lack of proper IT strategy, insufficient IT Security Policy and lack of effective back up policy, the department had furnished reply that they would take the recommendations for an effective and risk free computerisation. Knowing that the Committee was not satisfied with the reply, the Additional Chief Secretary, General Administration and Fisheries Departments admitted that the reply submitted earlier was not sufficient and he agreed to submit a detailed report in this regard within one week.

Conclusions/Recommendations

9. **The Committee views the action of Kerala Public Service Commission in purchasing computer hardware costing Rs. 47.57 lakh well before the development of software and to keep it idle for more than one year as a serious irresponsible act. This happened mainly due to improper planning and lack of preparation. Similarly, the Committee finds that there was a prolonged delay in the development of software for Phase III computerisation. As the scope of the project was to be finalised at the user requirement stage, the Committee views this lapse as very serious and opines that in this matter also lack of proper preparation and improper planning are the main reasons for the lapse. The Committee is dissatisfied with the reasons for the delay put forth by the department.**

10. **The Committee regrets to note that though a report on the implementation of the recommendations contained in the audit paragraph for the rectification of lapses such as delay in procuring and utilising OMR, lack of proper IT strategy, failure to mitigate risks in OMR scanning of answer sheets, improper maintenance of log book relating to scanning of answer sheets and delay in publishing results of examinations etc., was assured to be submitted within one week, the same is yet to be submitted. The Committee views this as an insult and desires the department to furnish a detailed report in respect of remedial measures taken against those points without any more delay.**

AUDIT PARAGRAPH

Integrated Payroll and Personnel Management System

Highlights

Under the Integrated Payroll and Personnel Management System (IPPMS), a centralized database of over 5.25 lakh employees working in the Kerala State Government Service in more than 100 Government departments is to be created by computerizing the entire payroll and personnel information related activities. Though as per the implementation plan, IPPMS was to be rolled out in all departments by April 2007, only 5,997 out of 5.25 lakh employees were brought into the payroll system as of May 2007. Audit of IPPMS revealed various shortfall/deficiencies viz., absence of specific action plan for digitization of service records of 5.25 lakh employees, absence of network connectivity for linking offices to access the system, discrepancies in employee data due to inadequate validation checks, etc. Some of the important points are given below :

The system was not implemented completely as the intra-state connectivity was lacking and completed data had not been captured.

Digitisation of employees was not achieved within target period due to poor planning of Government.

There was no backup policy. Backup of server data, information crucial to employees, was not stored off-site.

Although Government decided (November 2005) to extend SPARK to other departments, testing and acceptance of the successful completion of the SPARK was not ensured before replication to other departments.

In the absence of any security policy the system was exposed to the risk of external threats.

Deficiencies in the system allowed the possibility of re-processing of passed bills before encashment leading to the risk of double payment.

Inadequate validation controls in the system affected the reliability of the data base and its usefulness for MIS.

Salary bills of Self Drawing Officers were not generated through the system.

Manual processing of part salary bills and arrear bills without updating the system involved the risk of overpayment.

Introduction

Implementation of the Integrated Payroll and Personnel Management System (IPPMS), subsequently renamed as Services and Payroll Administrative Repository for Kerala (SPARK) was one of the 93 projects approved (November 2003) under the Modernizing Government Programme (MGP) of the Government of Kerala. As per the Detailed Implementation Plan (DIP) for MGP, the project was to be rolled out in all departments by April 2007, SPARK development visualized repositories of Government employee details including service matters, salary accounts and payroll. The database resides in a central server at State Data Centre and individual departments/offices are to access the server through intranet wherever available or else through the Internet. The project is implemented in various departments jointly by the Information Technology Department and the Finance Department through the Kerala State IT Mission (KSITM) with the technical assistance from National Informatics Centre (NIC). The system has SQL Server as back end and ASP. net as front end.

Objective of computerisation

The objective is to create an IT enabled, comprehensive and logically centralized Government employee information system to ensure :

(i) the availability of the required information to the authorities concerned in a pre-defined manner ;

(ii) transparency with respect to employee matters, better and planned utilisation of human resources, better and prompt services to the employees ;

(iii) accurate and automatic payroll processing ;

(iv) that the rules and regulations are uniformly applied to all employees thereby avoiding complaints and achieving better employee relations.

Scope, Objectives and Methodology of Audit

Records relating to pilot locations viz., Finance and General Administration Departments in Government Secretariat and the Commercial Taxes Departments; and one* out of two schools and one** out of five Collectorates were examined by using Computer Assisted Audit Technique (CAAIT). Adequacy of general IT controls and application controls and effectiveness of the system with reference to defined objectives of computerisation was assessed.

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* Model High School, Thiruvananthapuram

** District Collectorate, Thrissur

Audit criteria

- Project Implementation Plan,
- User Manuals,
- Relevant provisions of Kerala Service Rules and Treasury Rules.

Audit findings

Implementation

The project IPPMS formulated in 2003 was to be operationalised in December 2004, but development of software started with the sanction of funds only in July 2004. Implementation at the selected departments started in March 2005 and Government decided to implement the project in all other departments in November 2005.

Audit observed the following :

The system was not implemented completely as the intra-state connectivity was lacking and complete data had not been captured. The facility of online transfer of salary bills to Treasuries for encashment was also not made operational for want of connectivity with treasuries.

The project had envisaged complete digitisation of the service records of all 5.25 lakh employees within one year. However, KSITM could arrange to capture data only in respect of 59,489 employees (11 per cent) by May 2007, after spending Rs. 36.35 lakh (April 2007) which was in excess of the admissible amount as per the norms fixed in project plan by Rs. 22.35 lakh.

Though data had been captured in respect of 59,489 employees by May 2007, salary bills were being generated for only 5,997 employees through the system (May 2007).

Government stated (August 2007) that a rescheduling of target period of March 2007 was considered necessary as (i) data entry of 5.25 lakh employee details was a time consuming process (ii) connectivity and networking was to be processed in more than 30,000 offices and (iii) it was very difficult to keep a successful schedule of implementation for 30,000 offices. Government also stated that the first phase of KSWAN would be completed by December 2007 and the Departments have been requested to prepare a time-bound implementation plan and a further period of three years would be required to complete the project. This was indicative of poor planning of the Government.

Business Continuity Planning

Business Continuity Planning (BCP) is essential to ensure that the organization can prevent disruption of business and resume processing in the event of a total or partial disruption in the information availability.

There was no back-up policy specifying the steps to be followed in the event of a disaster or system failure. It was also observed that online backup of server data was also stored in the same premises. Employee information is a critical data which requires extensive backup and recovery strategies.

Government stated (August 2007) that additional backup in tape and off-site storage at KSITM was also planned and a recovery management plan would be drawn up.

Documentation

Testing and acceptance of application software, necessary for successful running of system was also envisaged in the Project. Although Government decided (November 2005) to extend SPARK to other departments testing and acceptance of the successful completion of SPARK was not ensured before replication to other departments. Moreover, failure in testing successful completion of the SPARK was also evident from the fact that features like online acceptance of authorization data from Accountant General's Office and the facility to transfer salary bills to treasury in electronic format to facilitate electronic payment were not operationalised pending network connectivity. During March 2007, KSITM decided to conduct black box testing and system audit of SPARK. However, translation of decision into execution was wanting.

Though the Government stated (August 2007) that action had already been taken to conduct the functionality test, operational test, load testing etc. and also the facility for data transfer to treasury, the same were not done till October 2007.

Failure to Carry out Business Process Re-engineering (BPR)

An IT project should not only replace a manual system but also bring about increase in efficiency through a process improvement. Government Order (November 2005) stipulated introduction of innovative methods of salary disbursement using facilities of modern techniques. However, no action had been initiated in this regard for want of a comprehensive study.

Government stated (August 2007) that the strategy was to aid manual system, first by automating it to the extent possible and take up BPR later in a phased manner. Audit is of the opinion that such process change should have been considered before implementation and the system designed accordingly.

IT Security

In the absence of any defined IT security policy in connection with the implementation of SPARK, the users were not aware of their roles and responsibilities in relation to IT security. Though access to SPARK was mainly through the Internet, no password policy had been framed for implementation of SPARK. Although it was stated in the user manual (login procedures) that the initial password would confidentially be communicated to each user, it was found that the initial password allotted was encrypted only when the users changed their passwords. As the majority of users had not changed their initial passwords, the passwords were in unencrypted form and thus exposed the system to the external threats. Details of users' access to the System (login time and exist time) were also not stored appropriately.

System Deficiencies

Failure to Protect the Bills generated

SPARK was designed to lock the bills automatically on passing the same by the Treasury Officer so as to prevent further changes and to restrict the double payment. In the absence of treasury connectivity the bills were to be generated under draft mode. Once the payment was made by the treasury, these were to be marked as final by DDOs. During comparison of details as per Treasury records and bills available in the System it was found that the bills passed for payment were not marked as final and as a result those bills were cancelled and reprocessed after presentation to treasuries. Such reprocessing could lead to overpayment/short payment. During data analysis by audit, a case was noticed where a bill for Rs. 3,90,620 (gross) and Rs. 3,07,526 (net) presented to treasury by M Section of GAD on 22 March 2007 (cashed on 30 March 2007) was cancelled and reprocessed on 27 March 2007. As a result, the bill particulars in the database stood changed as Rs. 4,06,922 (gross) and Rs. 3,23,145 (net) which did not reflect the amount cashed at treasury.

Government stated (August 2007) that the concept of draft and final bill had been done away with and the generated bills would be locked on entering the encashment details. This would not solve the problem, as the cancellation might take place even after presentation of the bill to treasury but before encashment. Unless there was a provision to lock the bills on passing the bills by the DDO, such serious lapse would recur.

Mismatch of Figures in System Data and Treasury Bill Book

GAD started generating pay bills through SPARK from June 2005. A comparison of the figures in database with treasury bill book revealed that in

24 bills (for February and March 2007), the gross amount as per system did not tally with treasury bill book. The mistake was attributed to the reflection of recovery of festival advance as a deduction in system while in the bill generated it was shown as deduct-expenditure. The purpose of database is defeated, as the gross amount of the bills did not reflect the correct position of disbursement. As Sections were not maintaining copy of bills, reasons for variation could not be ascertained.

Inadequacies in the System

The system could not generate the following need based information

(i) The number of staff for whom salary was drawn in each bill cannot be verified from the System.

(ii) The System lacked control to ensure that salaries for all employees are drawn every month unless withheld.

(iii) There was no provision to limit salary claim to the sanctioned strength.

Government stated (August 2007) that necessary provision would be included in the next version.

Input Controls/Data Validations

The objective of Input control is to ensure that the procedures and controls reasonably guarantee that (i) the data received for processing are genuine, complete, not previously processed, accurate and properly authorised and (ii) data are entered accurately and without duplication. Data validation is a process for checking transaction data for any errors or omissions and to ensure the completeness and correctness of input.

Data analysis revealed that there was no input control and the officers concerned failed to validate data leading to large scale deficiencies in the system affecting its utility as MIS as brought out in the succeeding paragraphs.

Permanent Employee Number (PEN), a system generated unique identification number, is allotted to an employee. PEN should invariably be noted in the respective SB on completion of data entry of each employee. A cross check of 277 employee data sheets with the Service Books (SBs) concerned revealed that, in 34 cases* the PEN was not found noted in the SBs.

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* Nine out of 203 cases in GAD, nine out of 43 in Finance Department, 13 out of 13 in Thrissur Collectorate, one out of nine in Model High School and two out of nine in Commercial Taxes Department

It was also seen that three records for an employee were created. In six out of 203 data sheets cross checked in GAD, two PENs each were noted in the SBs of employees. The database included at least 373 duplicate records, which made the database unreliable.

Government stated (August 2007) that strict instructions have been given to user Department to avoid creation of duplicate records.

Department Management User had the right for editing/deletion of the prime fields of any records. However, the editing of data was done frequently by the users and thus made the data unreliable. Names of father, mother and PEN as per Service Book were different from those as per the database. It was also seen from database that the name against PEN 1,01,757 has been replaced by "ABC" with all other details as that of PEN 1,01,106. Though the SPARK System was designed with provision to disable such editing on generation of first pay bill through the System, in the absence of certification of correctness of data entry, further editing of employee data had not been freezed.

Government stated (August 2007) that it is not advisable to stop editing completely as there may be cases where some data has to be changed.

Under SPARK, employees were grouped by department code, office code and bill code for the generation of pay bills. As the addition of new offices and office codes were not controlled centrally, there were 52 offices with multiple office codes within the same department. Similarly instances had also been noticed, where office codes were wrongly assigned. Government agreed to eliminate multiple/wrong entries (August 2007).

Some more inaccuracies in database were noticed in the absence of adequate input control in the system.

- Employee names were entered with upper case, lower case and also started with initials in some cases and end with initials in other cases. Moreover, there were mistakes in data entry in the crucial field of name of employee.
- 'Father's name' is a crucial field for identifying an employee. But in 10 cases in GAD, three cases in Finance and two cases in Collectorate, Thrissur, father's name was incorrectly entered.
- Date of birth in 10 cases was noted wrongly (2 January 1900 in five cases).

- The database contained 11 records in Collectorate, Thrissur, where date of joining was recorded as 2 January 1900. In 14 records in GAD, five in Finance, two in Model HS and one in Commercial Taxes Department, the field 'date of joining service/department' had also been captured incorrectly.

Government (August 2007) issued necessary instructions to the user Departments for careful verification of data.

One of the objectives of SPARK is to serve as a service repository for Government of Kerala. This would require that every piece of information relating to each employee of the Government should be available in the database. However, audit scrutiny revealed that there were several mistakes in data entry in the fields relating to service particulars as shown below :

- The data base contained 5,140 designations in various departments, which included 58 duplicate designations in the same department.
- Mistakes were noticed in data entry relating to past services of the employees (five cases in GAD and three cases in Finance Department), leave particulars (25 cases in GAD and seven cases in Finance department) and surrender of leave (53 cases in GAD and 18 cases in Finance department).
- Similarly, data relating to Leave Without Allowances (LWA), a crucial information for calculation of pay and allowances and qualifying service for pensionery benefits was also found wrong in GAD.

The data base included 177 records, where age on the date of joining was less than 18 years. The age on the date of joining varied between 107 and 56 in 16 cases. In 84 cases date of joining was the same as date of birth. Hence the system could not be relied upon for calculation of qualifying service.

As the System was designed to calculate the date of superannuation (DOS) assuming the age of retirement as 55 and the field DOS was made editable, many mistakes in the date of superannuation crept in as under.

(i) In the case of PEN 1,24,712, whose date of birth is 1 February 1972, DOS is entered in SPARK as 28 February 2027, as against 31 January 2027.

(ii) In 32 cases, date of birth was same as date of superannuation.

(iii) In three cases, date of superannuation was prior to date of birth.

(iv) Age on date of superannuation as per the system exceeded 55 in 293 cases, of which 177 employees did not belong to the service category eligible for enhanced age of retirement of 60/70.

Government stated (August 2007) that the required controls would be incorporated in the next version.

'Stop salary' option was provided in the System to prevent generation of salary bill through SPARK, in case an employee is transferred to another office, where SPARK was yet to be introduced 'Retire' option was used to prevent further processing of salary, when an employee retires from service. LWA option was used to restrict salary to duty pay as admissible. It was, however, seen that the users in different departments were using these provision differently as under.

(i) Stop salary table contains 1329 records, where the reasons for stopping salary are recorded as 'transfer', 'inter-dept transfer', 'LPC issued', 'deputation', 'promotion', promotion as SO', 'Leave without allowance', 'suspension', 'superannuation' etc. No reasons were recorded in 66 cases.

(ii) Retirement table contains only 15 records, though the database included 3,556 employees who had crossed the age of 55.

(iii) A scrutiny of the cases of stop salary due to superannuation revealed that the persons, who were not due to retire were also included in the stop salary table. For example, PEN 1,03,447 whose date of birth was recorded as 25 May 1975.

Similarly as per Bill control table 8,150 out of 10,008 bills generated were cancelled for reprocessing of bills to rectify mistakes. As GAD, which started generating bills through SPARK during June 2005, had cancelled 431 bills for preparing 34 bills during March 2007, it is evident that 81 per cent bill cancellation is due to inadequate training.

Government stated (August 2007) that additional training was being planned to address the operational problems.

Database contained 47 records of bills with gross amount as zero, while the net amounts were not zero. In four cases gross, deduction and net were zero. Moreover there was no validation control to ensure that gross minus deduction tallies with the net.

Government stated (August 2007) that the record with error was not removed from the system automatically on cancellation. However, the fact remains that the bills were not cancelled bills and the bills for the net amount were seen encashed though the gross amounts were shown as zero.

Other Points of Interest

Updation of Service Books (SBs)

On commencement of online processing of bills through SPARK, further changes in basic pay by granting of increment were updated by the system automatically on sanction. Though the training manual stipulated simultaneous updating of Service Books (SBs), a cross-check of data sheet with SBs in GAD revealed that the sanction orders of increments were not noted in the SBs. Discontinuance of the manual system without rectifying the mistakes of data entry and without integration of the whole system by testing and acceptance of all modules, involved the risk of rendering the SBs unreliable.

Failure to Update Pay Bill Register

A comparison of computer generated bill for the month of April 2007 and pay bill registers revealed that gross and net amounts as per SPARK generated bill did not tally with the corresponding figures in the pay bill register in respect of some of the employees in Collectorate, Thrissur. This showed that the manual bill register also did not indicate the correct amount of bill drawn through SPARK.

Failure to Process Salary Bills of Self Drawing Officers (SDO)

SPARK envisaged online updating of employee data relating to SDOs based on authorization issued by Accountant General (AG). SPARK has provision for processing of bills by SDOs by inputting the figures from the pay slip issued by AG. Processing of bills of all SDOs along with establishment bills would mean that Government would be able to monitor the expenditure incurred by each and every office. However, the number of SDOs processing their bills was found to be negligible. Though there are 729 SDOs in GAD, only five SDOs were using SPARK for generation of salary bill.

Government stated (August 2007) that large number of login ids could be allotted for processing SDO bills only after enhancement of capacity and load testing.

Manual Processing of Part Bills and Arrear Bills

SPARK has enabled provision for processing of arrear bills, if the amount drawn relating to the period in question is available in the System; otherwise arrear bills are to be prepared manually and the relevant fields in SPARK in respect of the employees concerned are to be updated. It was seen that part salary bills were also prepared manually due to absence of provision to prepare salary in respect of the persons transferred from or joining the office during the

middle of a month as one of the office is not online under SPARK. This might lead to overpayment of arrears. 107 bills in February 2007 and 181 Bills in March 2007, included in treasury bill book of GAD, were not included in the bill control table of SPARK. These were stated to be part bills and surrender bills. But none of the users updated the relevant fields in SPARK for want of follow up instructions.

Government stated (August 2007) that necessary remedial measures would be incorporated in the BPR already commenced.

Conclusions

Though the project is under implementation for over three years it cannot yet be termed as reliable.

Government stated (August 2007) that the implementation plan and system development were being fine tuned to ensure complete coverage of SPARK by December 2010.

Recommendations

THE IT DEPARTMENT SHOULD

- select one or two departments, which have computerised all their offices and connected through WAN and bring all employees including SDOs of the selected department under SPARK.
- take up further replication of the software in other departments only after testing and acceptance of all modules of the System, by adopting approved system methodology and introduction of digital signature for DDOs and SDOs.
- consider appropriate BPR to restrict the bill processing through the System upto block level.
- amend relevant rules and orders in the Codes and Manuals to facilitate computerized billing and discontinue manual registers other than SB.

Government agreed to adopt the recommendations and stated that the personnel management modules would be tested in two or three departments before State wide roll out and a comprehensive BPR would be proposed based on test experience.

[Paragraph 3.5 contained in the Report of the Comptroller and Auditor General of India for the year ended 31 March 2007 (Civil)].

Notes received from Government on the paragraph are included as Appendix II.

11. By commencing the discussion, the Committee enquired about the reasons for the shortfalls/defects noticed in the working of Integrated Pay roll and Personnel Management System decided to be implemented in Government departments. Some of the reasons pointed out were the lack of intra-state connectivity, lack of complete data, poor planning, lack of back up policy etc. The Secretary, Information Technology Department replied that IPPMS, a corporate software package framed for online personnel and management plan for Government of Kerala was a large scheme. Data entry of a large number of government employees is a time consuming effort. Periodical meetings were also convened to prepare plans for time bound implementation of the system incorporating a system change. Government had decided to prepare and disburse salary in respect of about 5.25 lakh government employees only through SPARK. For the proper implementation of the system, the employees are categorized into four groups and the time for completion of work related to each category have been fixed. The employees of Category (A) would draw salary from 1st October 2008, Category (B) from 1st November 2008, Category (C) from March/April 2009 and Category (D) from 1st July 2009. The data entry of Category A & B has been completed. The works of other two categories are yet to be started.

12. Then the Committee made it clear that the data entry of the employees were not at all correct with respect to the Service Books of the incumbents. The Committee asked whether those mistakes were rectified. The Committee pointed out that eventhough the scheme was framed in the year 2004, it could not be completed even after a lapse of 4 years. The Committee suspected whether the statement that the salary bills for 5,997 employees were generated through the system was correct and commented that eventhough the process involved in the system such as data entry, verification of data, cross checking etc. needed less effort, it was very pathetic to say that the department had failed to implement the scheme in a useful manner. The witness, Secretary, Information Technology Department replied that while data were entered by the data entry operators, 5 to 10% mistakes would be expected. Those mistakes were used to be corrected by the establishment staff, while they use the system. The witness informed that data entry about 2,00,000 employees had been completed by the time. To the question of the Committee as to whether there were any periodical checks to verify the data, the Secretary, Information Technology Department answered that monthly meetings to review the development of the process were being convened by the Chief Secretary. Since the scheme was to be implemented by concerned departments, they were frequently reminded about the progress of the work. Not satisfied with this reply the Committee asked about the arrangements made for the periodical

verification. The Committee wanted to know the authority responsible for the periodical verification. The witness explained that once a bill was generated, it would be passed after thorough checking. STQC, an institution run by Government of India had its main purpose to conduct various tests viz., Black Box test, Functionality test, Load test, Application Security Test etc. They are mainly responsible to check whether the data is accepted by the system.

13. While gone through the audit observation that date of birth in 10 cases was entered wrongly, the Committee expressed its dissatisfaction on the lack of periodical verification of system. The data were not verified and the mistakes were not rectified either at the inspection level or at the audit report level. The Committee expressed concern over the lack of action to rectify the defects. The Pay bill and Personnel Management Software were very common and simple and it should not have taken such a long time to rectify the defects. The Committee strongly suggested to conduct revalidation of the data at the entry level itself. The Committee again pointed out that it was the duty of the Administrative Department or SPARK to rectify the errors. By upholding the case of Legislature Secretariat, where things were smooth, the Committee opined that errors were to be rectified with the joint effort of staff. Then the Committee enquired whether the inaccuracies were rectified as and when they were noticed. The Committee further wanted to know the latest position also. The Additional Chief Secretary, General Administration and Fisheries Departments replied that the system was introduced through IT Department and General Administration Department had no monitoring over it. Not satisfied with the reply, the Committee opined that the complete problem originated from that type of attitude. Service Books of the employees are kept with General Administration Department. If complete information relating to each Government employee were not available, they could not go forward. The Committee directed to rectify the defects with the joint effort of Administrative Department and SPARK. The Committee insisted to carry out the rectification of defects under the responsibility of General Administration Department. The witness, Additional Chief Secretary, General Administration and Fisheries Departments informed that the scheme which was carried out under the guidance of IT Department had to be implemented by the Administrative Department. The witness added that no mistake was found in 3,000 data base already entered under SPARK. When the position was reviewed at the meeting held at Chief Secretary level, the task to rectify the defects in the data entry was assigned to the concerned Administrative Departments. The Information Technology Department is vested with duties like supply of software, impart technical guidance, verification of data, rectification etc. The Government Offices were classified into four categories and it was decided not to disburse salary in respect

of Category 'A' and 'B' other than through SPARK from April 2009 onwards. The Additional Chief Secretary, General Administration and Fisheries Departments assured that the monitoring from the part of Government would be made more effective for the speedy operation.

14. The Committee expressed its strong dissatisfaction over the delay in implementing the system and the irresponsibility of the departments in rectifying defects in data entry. The Committee turned its attention to the inaccuracy noticed by the audit that the date of birth were entered as January 2, 1900. It should be verified whether details would be available in the Service Book of the incumbents. The Committee opined that the checking of the correctness of the data should be done urgently with the joint effort of Administrative Department and SPARK. The Secretary, Information Technology Department replied that it was instructed to use the system after verification by the concerned establishment section. The Secretary agreed to instruct all departments to rectify the defects in the data base with respect to Service Books subject to the recommendation of the Committee. When the Committee enquired about the time frame of the system, it was informed that Government Order in this regard had been issued on 5-8-2008. The salary in respect of more than 30,000 Government Officers throughout the State covering around 5 lakh of employees had to be disbursed through SPARK. The Committee suspected whether the Government Order could be implemented unless the data were entered and wanted to know the cut-off time proposed for completing the work. The Secretary, Information Technology Department replied that the time limit was fixed as July 2009. The Committee opined that due to the inefficiency of some departments, some people in various departments would suffer. The witness assured that the system would be completed within one year.

15. Regarding the audit observation in respect of defects in documentation, the Committee enquired whether the mistakes were rectified. The IT Secretary, informed that the defects were being rectified. The Committee pointed out that the application in OMR sheet for entrance examination was being filled in by the candidates and 5 lakh applications were to be scanned within one week. The Committee suggested to collect the data from the employees in OMR sheets and opined that trained people were essential for tackling such works. The Secretary, IT Department replied that district level as well as State level training programmes were being imparted. He then revealed the difficulties in the collection of service details from the employees in OMR sheets. He put forth some reasons for this. First of all most of the employees had no knowledge about their actual Salary, DA, HRA etc. Secondly, the bills of LGS are not single bills but mass bills. Further, the details in Service Books

are not familiar to employees. Handing over of Service Books to employees is not feasible due to chances of manipulation. Then the Secretary, IT Department assured to complete the entire work before June 2009. It was also proposed to disburse salary of about 40,000 employees through this system.

16. Then the Committee asked about the IT security policy in connection with the implementation of SPARK. The witness replied that the IT policy decided by the Government of India had been implemented in our State also. The Secretary, IT Department told about the need of an awareness campaign programme to be convened in this regard. The Committee recommended to conduct a detailed study on the subject including the upto date functioning of the system, its defects, corrective methods to be adopted, steps to be taken to avoid defects etc. either by the IT Department or by any other competent agency and that corrective measures should be taken on the basis of the report of the study. The witness agreed to do so.

17. The Committee noticed the audit observation that lack of connectivity with treasuries and due to reprocessing of bills after presentation of the same in the treasury, contradictory figures existed in the data base of the department and that of the Treasury and viewed this very seriously and suggested that this should be tackled with great care. The Committee opined that the basic reason for the problem was the improper handling of the administrative power. If the department had a perfect system for verification and rectification of defects this would not have happened. At this juncture, the Secretary, Information Technology Department explained the existing system of audit. If an error happens to creep in the manual work, the same error would be reflected in the computer generated product also. It was the duty of the concerned Finance Officers to check the bills. The Committee pointed out the failure of the Internal Audit Wing and enquired about the quantum of work already completed out of target number 5,25,000. The Secretary, Information Technology Department answered that it was 40,000. When the Committee suggested the need for care to be taken at the time of revalidation, the Secretary, Information Technology Department agreed to do everything seriously and without fail. Then the Committee wanted to know the ways to rectify the defects. To the reply of the Secretary, Information Technology Department that a skillful advanced software testing was needed, the Committee advised to arrange it urgently. The Committee alleged that administrative lapses, deficiency of supervision and lack of will power were the main reasons for the failure of the system. The Committee suggested to workout a mechanism to solve the problem urgently.

18. Thereafter, the Committee asked about the provision to lock bills on passing them by the concerned Drawing and Disbursing Officers. The witness,

Secretary, IT Department replied that the system to prevent further changes after the payment of bills had already been incorporated. The software in use was developed by the NIC for Government. Even though the system was introduced by SPARK, the department had failed to install a system for software testing. The witness continued that the system consisted of four different components viz., data entry, internal audit issues, adoption by concerned departments and the software application. The work connected with software application alone was done directly by Information Technology Department. Software testing had to be done by STQC. It would take 1 to 2 years to complete the testing as the documentation for testing was to be prepared and supplied by NIC. Considering the importance of the issue, the Committee suggested to conduct a test audit for a sample section and check whether any errors were crept. The Committee also directed to take immediate steps to implement the system in 2009 itself. For that, data already entered should be revalidated and the data related to retired employees and defective data should be revalidated within 6 months.

Conclusions/Recommendations

19. **The Committee observes that even though the IPPM System procedure needs only less effort, the department failed to implement it in a useful manner. The Committee criticizes the department for not adopting a procedure for periodical verification of data entered as a result of which so many errors remains unnoticed. Regarding the rectification of defects in the data entry, the Committee suggests to revalidate the data at the entry stage itself. The stand of the General Administration Department that monitoring of the system is vested with the IT department is not at all acceptable to the Committee. The Committee stresses that rectification of defects is the joint responsibility of the Administrative Department and SPARK. The Committee expresses dissatisfaction over the careless entry of date of birth etc. of incumbents. The Committee suspects whether salary bills in respect of all employees could be disbursed through SPARK within the time limit if such works go on in a snail's pace.**

20. **The Committee emphasizes the need for a system to verify and rectify the defects in the bills generated. The Committee instructs the department to revalidate the data related to retired employees and defective data immediately so as to implement the system in the year 2009 itself. The Committee suggests the IT department to instruct all departments to rectify the defects in the data base in a war footing. The Committee is of the opinion that administrative lapses, deficiency of supervision and lack of will power are the main reasons for the failure of the system. Hence the introduction of a skillful advanced software testing is needed for the proper functioning of the SPARK. Sample test audit is also necessary to ascertain the correctness of data.**

21. **The Committee earlier suggested to implement the foolproof system of SPARK in all Government Departments by the year 2009. Hence, the Committee desires to know the present position of the implementation of the system.**

22. **The Committee recommends to conduct a study either by IT department or by any other competent agency for evaluating the upto date functioning of the system, defects and drawbacks, methodology adopted to rectify defects, precaution accepted to shun errors etc. and to take appropriate follow up action on the basis of the study Report.**

ARYADAN MUHAMMED,

Chairman,
Committee on Public Accounts.

Thiruvananthapuram,
23rd June, 2010.

APPENDIX I

Summary of Main Conclusions/Recommendations

Sl. No.	*Para No.*	*Department concerned*	*Conclusions/Recommendations*
(1)	(2)	(3)	(4)
1	9	General Administration	The Committee views the action of Kerala Public Service Commission in purchasing computer hardware costing Rs. 47.57 lakh well before the development of software and to keep it idle for more than one year as a serious irresponsible act. This happened mainly due to improper planning and lack of preparation. Similarly, the Committee finds that there was a prolonged delay in the development of software for Phase III computerisation. As the scope of the project was to be finalised at the user requirement stage, the Committee views this lapse as very serious and opines that in this matter also lack of proper preparation and improper planning are the main reasons for the lapse. The Committee is dissatisfied with the reasons for the delay put forth by the department.
2	10	,,	The Committee regrets to note that though a report on the implementation of the recommendations contained in the audit paragraph for the rectification of lapses such as delay in procuring and utilising OMR, lack of proper IT strategy, failure to mitigate risks in OMR scanning of answer sheets, improper maintenance of log book relating to scanning of answer sheets and delay in publishing results of examinations etc., was assured to be submitted within one week, the same is yet to be submitted. The Committee views this as an insult and desires the department to furnish a detailed report in respect of remedial measures taken against those points without any more delay.

(1)	(2)	(3)	(4)
3	19	General Administration and Information Technology	The Committee observes that even though the IPPM System procedure needs only less effort, the department failed to implement it in a useful manner. The Committee criticizes the department for not adopting a procedure for periodical verification of data entered as a result of which so many errors remains unnoticed. Regarding the rectification of defects in the data entry, the Committee suggests to revalidate the data at the entry stage itself. The stand of the General Administration Department that monitoring of the system is vested with the IT department is not at all acceptable to the Committee. The Committee stresses that rectification of defects is the joint responsibility of the Administrative Department and SPARK. The Committee expresses dissatisfaction over the careless entry of date of birth etc. of incumbents. The Committee suspects whether salary bills in respect of all employees could be disbursed through SPARK within the time limit if such works go on in a snail's pace.
4	20	Information Technology	The Committee emphasizes the need for a system to verify and rectify the defects in the bills generated. The Committee instructs the department to revalidate the data related to retired employees and defective data immediately so as to implement the system in the year 2009 itself. The Committee suggests the IT department to instruct all departments to rectify the defects in the data base in a war footing. The Committee is of the opinion that administrative lapses, deficiency of supervision and lack of will power are the main reasons for the failure of the system. Hence the introduction of a skillful advanced

(1)	(2)	(3)	(4)
			software testing is needed for the proper functioning of the SPARK. Sample test audit is also necessary to ascertain the correctness of data.
5	21	Information Technology	The Committee earlier suggested to implement the foolproof system of SPARK in all Government Departments by the year 2009. Hence, the Committee desires to know the present position of the implementation of the system.
6	22	,,	The Committee recommends to conduct a study either by IT department or by any other competent agency for evaluating the upto date functioning of the system, defects and drawbacks, methodology adopted to rectify defects, precaution accepted to shun errors etc. and to take appropriate follow up action on the basis of the study Report.

APPENDIX II

Remedial Measures Taken and Reply to Audit Paras

INTRODUCTION

Computerization Programme was launched in the KPSC in a phased manner with a clear IT. strategy. The phased programme was implemented in the KPSC in consultation with the immensely Technical experts erudited in automation constituted by the Commission. The Commission discussed the suggestion and recommendations of the Committee and took decision ; which resorted to Computerization by implementing Recruitment Application Processing System (REACT) in 2001. The Government was also addressed in the matter and necessary Government Orders were obtained regarding phased automation.

Para 3.3.12 The intention of the Commission while introducing OMR type applications was to make the candidates acquainted with the filling up of sophisticated newly introduced OMR applications providing both the Conventional form and OMR form, in the same application to avoid a huge number of rejection of application. Otherwise it will be an injustice to many number of applicants who are coming from remote rural areas of Kerala. The Commission felt that the huge number of applicants dwellings rural areas may suffer by rejecting these applications mechanically. It will result in major social repercussions. Indiscriminate Computerization is not a policy of the Commission when the programme of scanning was introduced in the Office of Commission some defects, were noticed. The Commission scanned 81789 applications of a particular post as a test case; 22% of applications were seen rejected; due to the defective filling up of application. This was an injustice to the applicants. Unlike Union Public Service Commission and various other State Public Service Commissions, the Kerala Public Service Commission is having the duty of making selections to a large number of low paid posts for which even SSLC is not required. The candidates who are not well-versed with OMR application had committed a lot of mistakes and thus lead to rejection of substantial number of applications during scanning.

Circular No. 6/2004 dated 31-1-2004 has been issued describing as to how Scanning and Data entry are to be done. Again this was amended as per Circular No. ll/2004, dated 20-3-2004 and Circular No. 33/2006, dated 13-10-2006.

REACT was introduced as a new system in the Office of the Commission. Many unforeseen hurdles had to be overcome and being transition period from Conventional type to computerized, extreme care was taken in this regard. When the candidates have become almost familiar with the new type of format, extensive scanning was started and the limit prescribed for scanning has been removed as per Circular No. 3312006, dated 13-10-2006.

The principal objective of the Computerization in this Office was not scanning but processing. During Phase I and II the pendency of application was brought down from 98 Lakhs to 40 Lakhs and with the implementation of Phase III. the Commission could finalize selections within a year from the last date fixed for receipt of application. The Commission aiming to reduce this period to six months by extensive computerization and scientific distribution of work.

Para 3.3.13 Statement furnished earlier to the effect that 81789 applications were scanned as a test case is true. Details of application scanned were properly accounted and number tallied before the examinations were conducted. Log books are maintained true to letter and spirit abiding Circular No. 6/2004, dated 31-1-2004 as amended as per Circular No. l1/2004, dated 20-3-2004 and Circular No. 33/2006, dated 13-10-2006.

Para 3.3.14 The major portion of the selection of the Commission is being done in the District/Regional Offices. The nature of District wise selection is such that it cannot be transferred to Head Office. The major portion of the work relating processing of application related preparation of the Short List and Ranked List are being done in the various District Offices and Regional Offices. The Work in the Public Service Commission is strictly confidential.

The work is distributed among the Head office and various District Regional Offices of the Commission. Many Ranked lists are being finalized in the various District/Regional Offices of the Commission.

The transfer of data and other particulars in between the Head Office and various District/Regional Offices is very essential. Data integrity is not compromised by e-mail transfer. Even

though leased line was contemplated in the initial stage, it was dropped at the final stage as it was found too expensive dial up system was accepted as it was found to be feasible and economical. The nature of work in the KPSC is peculiar and quite sensitive.

Para 3.3.15 The delay in the implementation of Software Development is due to certain modification and addition to incorporate in the programme in recruitment procedure. Even a minor error in the recruitment process will have major repercussion in the society and it will pave way to a embarrassing situation. Hence the implementation could be carried out only after ascertaining accuracy at several stages. The Commission could not compromise the reliability and credibility in the recruitment activities. Computerization in KPSC cannot be implemented at such a speed as par with the implementation in other Government Departments as the work of Commission is unique in nature.

Para 3.3.16 Considering the peculiar and sensitive nature of work in the KPSC the delay in software development is quite natural as modifications and additions were required to be incorporated in the program to suit the time tested and a foolproof procedure in recruitment activities. Moreover the draft SRS documents had to be circulated to the respective sections for suggesting modifications and changes. As these were time consuming the delay had to be condoned. The hardware purchased was utilized for checking and testing the software being developed and it was never kept idle.

Para 3.3.17 As stated in our reply, the delay in the implementation of software development at the user requirement stage was due to the fact that even a minor error in the recruitment process will have major repercussions among thousands of Job Seekers. In order to avoid such unwarranted situation the draft SRS documents have circulated to concerned sections for suggestions, regarding additions and modifications. The Commission could not compromise on credibility, transparency in all its activities. As such all of a sudden computerization cannot be implemented since the work of the Commission is unique and open to scrutiny. During the above process of Connection, addition and modification, the hardware purchased was utilized for checking and testing the software being developed.

Para 3.3.18 The procedures and formalities involved is so complicate that it cannot be done in a day or within a time fame because all these were time consuming process. As such no purposeful delay occurred in connection with the procurement and utilization of OMR machines.

Para 3.3.19—3.3.20 During this year Answer Scripts of 150 posts were scanned till November 2006 and about 20 Lakhs A and B parts were scanned. For the selection of candidates to certain posts of OMR exams are not practicable and as a result. Commission conducted descriptive type examination for such posts. Now as a result of wide computerization, the selection procedures were quickly completed and about 90% of the examinations were done using OMR Type Answer sheets.

Para 3.3.21 The statement made in this Para is based on a wrong assumption that the Answer sheets are heaped as a bundle in the OMR machine and the same is scanned. The following is the method adopted for scanning answer sheets.

I. **Preparation Time**

(i) *Changing Application*

Application in the System is changed so as to suit the new answer key prepared for scanning.

(ii) *Scanning of Answer Key*

Scanning of Answer Key have to be done before scanning of answer scripts and the results have to be recorded in the log register, proper certificate and signature of the Deputy Secretary (OMR) obtained.

(iii) *Recordings to be made in the Register*

When the bundles received from the examination center (packed in sealed covers containing Answer Sheets ranging from 100 to 400) are taken for scanning, the bundle number, number of answer sheets to be scanned in that particular bundles starting scan number are to be recorded in log register.

II. ***During Scanning***

At times the bar code number, scan number, total marks secured are not printed in the answer sheets while scanning.

Then and there the machine is stopped and the above are collected from the system and recorded. Entries in this regard are also to be made in the logbook.

III. **After Scanning**

When scanning is completed the ending number have to be recorded. The difference between the starting number and ending number have to tally with the total number of answer sheets in that particular bundle. If there is a difference in the answers sheets scanned and the total number of answer sheets in the bundle it has to be verified and corrected by counting Answer sheets manually and referring to the signed list received from the center which is kept in the exam wing. So, it may be noted that even with 24 hours working 30,000 answer sheets cannot be scanned.

As per Rules of Procedure, it is for the Commission to decide the nature of examination to be conducted for a particular post. There are certain posts, the selection of which cannot be conducted by the Objective Type Examinations. It is not the number of posts for which Objective Type (OMR) exams are conducted to be taken into account but the number of candidates appeared for the Objective Type (OMR) test. In that event, it can be seen that 80 % of candidates appeared for OMR type tests. The Examinations for selection to the posts of LDC, LGS, Police Constables, Fireman, Forest Guard, etc. for which the number of candidates appearing are very large, Objective Type (OMR) tests are conducted.

Para 3.3.22 OMR answer sheets are designed in two parts—Registering Part (Part A) and Answer Sheet Part (Part B), with common barcode number. The barcode number can be decipher either by barcode number of by OMR Scanner. After the examination, the candidates themselves separates Part A and B and the same packed in separate packets. A & B parts are separated in such a away that half the barcode appears in each part. Observations made in Para 3.3.22 and 3.3.23 and 3.3.24 are actually in vogue.

Para 3.3.25 Examination for the post of Manager, Khadi Gramodyoga Bhavan held on 31-10-2000. It was a clerical mistake to write

the number of sheets scanned in the LOG Book. Actually the numbers of sheets scanned were tallied and after tallying and merging both. 'A' and 'B' parts sheet the Commission published Short list. Duplication of Register number is a factor rarely occurred as the candidates wrongly write the register number in answer sheets.

From the scrutiny of applications and examination of signed list of candidates, Commission was able to find out the right candidate over to invalidate the answer scripts of wrongly entered Register numbers.

Para 3.3.26 Every minute work carried out during the entire process of valuation of answer scripts is controlled, supervised and guided by the higher officers posted in OMR Room. Comprehensive and scrupulous guidelines have been issued to instigate any hardships that may arise at the time of scanning answer sheets. The Commission thrives to achieve per cent accuracy in this very delicate and sensitive process. Reconciliation of the number of Part A and Part B answer sheets scanned have been verified and tallied before processing further. The method for scanning answer sheets has been already intimated as reply to Para 3.3.21. Mismatch of the barcode numbers in the event of duplication will be checked and similar barcode number discarded. For a particular examination separate series of answer sheets are used and the balance answer sheets if available will not be used for other examinations. Since the barcode numbers have been verified by the supplier, there is very little chance of any barcode duplication.

Para 3.3.27 Offsite preservation of backup data is now being implemented. Circular No. 32/2006 dated 8-9-2006 envisages the backup policy to be adopted in processing the data.

Para 3.3.28 CD Writer have been installed in all District/Regional Offices of the Commission and Offsite backup implemented in tune Circular No. 32/06.

Para 3.3.29 Server and other sensitive machines are now being kept in a cool, dust tree environment with physical access restriction. In District Office steps have already being taken to clean up the location where in such machines are kept.

Para 3.3.30 Logical access control is provided at application level. Circular No.14/2004 have been issued incorporating necessary guidelines to implement password policy to keep the utmost confidentiality of the Commission strict access control is now being enforced.

Para 3.3.31 The purpose of computerization in Kerala Public Service Commission is mainly to expedite the recruitment activities. Scanning of applications and valuation of answer scripts through OMR machines paved the way for considerably shortening the period of finalizing the selection. Steps are also taken to minimize human involvement in the valuation of answer scripts and subsequent publishing of ranked lists. Pendency is now brought down to minimum through very effective utilization of REACT.

In this context it is remarkable that Kerala Public Service Commission was honoured with the National E-Governance Award for the year 2005 for Exemplary Leadership and ICT Achievement in effective functioning of the REACT And, in Kerala, it was only for Kerala Public Service Commission this award was given that year.

It is assured that the Commission will take note of the recommendations in Para 3.3.32 for an effective and risk fee computerization.

C. R. RAVIKUMAR,

Joint Secretary (R and A),
For *Secretary,*
Kerala Public Service Commission.

Rmedial Measures Taken and Reply to Audit Paras

INTRODUCTION

Computerization Programme was launched in the Kerala Public Service Commission in a phased manner with a clear IT strategy. The phased programme was implemented in the Kerala Public Service Commission in consultation with the immensely Technical experts erudited in automation constituted by the Commission. The Commission discussed the suggestion and recommendations of the Committee and took decision ; which resorted to computerization by. implementing Recruitment Application Processing System (REACT) in 2001. The Government was also addressed in the matter and necessary Government Orders were obtained regarding phased automation.

Para 3.3.12 Statement furnished earlier to the effect that 81789 applications were scanners as a test case is true. Details of application scanned were properly accounted and number. tallied before the examinations were conducted. Log books are maintained true to letter and spirit abiding Circular No. 6/2004, dated 31-1-2004 as amended as per circular No. 11/2004, dated 20-3-2004 and Circular No. 33/2006 dated, 13-10-2006.

Para 3.3.14 The major portion of the selection of the Commission is being done in the District/Regional Offices. The nature of District wise selection is such that it cannot be transferred to Head Office. The major portion of the work relating processing of application related preparation of the Short List and Ranked List are being done in the various District Offices and Regional Offices. The work in the Public Service Commission is strictly confidential.

The work is distributed among the Head Office and Various District /Regional Offices of the Commission. Many Ranked lists are being finalized in the various District/Regional Offices of the Commission.

The transfer of data and other particulars in between the Head Office and various District/Regional Offices is very essential. Data integrity is not compromised by e-mail transfer. Even though leased line was contemplated in the initial stage, it was dropped at the final stage as it was found too expensive and dial up system was accepted as it was found to be feasible and economical. The nature of work in the Kerala Public Service Commission is peculiar and quite sensitive.

Para 3.3.15 The delay in the implementation of Software Development is due to certain modification and addition to incorporate in the programme in recruitment procedure. Even a minor error in the recruitment process will have major repercussion in the society and it will pave way to an embarrassing situation. Hence the implementation could be carried out only after ascertaining accuracy at several stages. The Commission could not compromise the reliability and credibility in the recruitment activities. Computerization in Kerala Public Service Commission cannot be implemented at such a speed as par with the implementation in other Government Departments as the work of Commission is unique in nature.

Para 3.3.16 Considering the peculiar and sensitive nature of work in the Kerala Public Service Commission the delay in software development is quite natural as modifications and additions were required to be incorporated in the program to suit the time tested and a foolproof procedure in recruitment activities. Moreover the draft SRS documents had to be circulated to the respective sections for suggesting modifications and changes.

As these were time consuming, the delay had to be condoned. The hardware purchased was utilized for checking and testing the software being developed and it was never kept idle.

Para 3.3.17 As stated in our reply, the delay in the implementation of software development at the user requirement stage was due to the fact that even a minor error in the recruitment process will have major repercussions among thousands of Job Seekers. In order to avoid such unwarranted situation the draft SRS documents have been circulated to concerned sections for suggestions, regarding additions and modifications. The Commission could not compromise on credibility, transparency in all its activities. As such all of a sudden computerization cannot be implemented since the work of the Commission is unique and open to scrutiny. During the above process of correction, addition and modification, the hardware purchased was utilized for checking and testing the software being developed.

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3.3.20 During this year Answer Scripts of 150 posts were scanned till November 2006 and about 20 Lakhs A and B parts were scanned. For the selection of candidates to certain posts of OMR exams are not practicable and as a result Commission conducted descriptive type examination for such posts. Now as a result of wide computerization, the selection procedures were quickly completed and about 90% of the examinations were done using OMR Type Answer Sheets.

Para 3.3.21 The statement made in this Para is based on a wrong assumption that the Answer sheets are heaped as a bundle in the OMR machine and the same is scanned. The following is the method adopted for scanning answer sheets.

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Scanning of Answer Key have to be done before scanning of answer scripts and the results have to be recorded in the log register, proper certificate and signature of the Deputy Secretary (OMR) obtained.

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As per Rules of Procedure, it is for the Commission to decide the nature of examination to be conducted for a particular post. There are certain posts, the selection of which cannot be conducted by the Objective Type Examinations. It is not the number of posts for which Objective Type (OMR) exams are conducted to be taken into account but the number of candidates appeared for the Objective Type (OMR) test. In that event, it can be seen that 80% of candidates appeared for OMR type tests. The Examinations for selection to the posts of LDC, LGS, Police Constables, Fireman, Forest guard, etc. For which the number of candidates appearing are very large, Objective Type (OMR) tests are conducted.

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Para 3.3.25 Examination for the post of Manager, Khadi Gramodyoga Bhavan held on 31-10-2000. It was a clerical mistake to write the number of sheets scanned in the LOG Book. Actually the numbers of sheets scanned were tallied and after tallying and merging both ‘A’ and ‘B’ parts sheet the Commission published Short lists. Duplication of Register number is a factor rarely

occurred as the candidates wrongly write the register number in answer sheets. Commission was able to find out the right candidate over to invalidate the answer scripts of wrongly entered Register numbers. From the scrutiny of applications and examination of signed list of candidates.

Para 3.3.26 Every minute work carried out during the entire process of valuation of answer scripts is controlled, supervised and guided by the higher officers posted in OMR Room. Comprehensive and scrupulous guidelines have been issued to instigate any hardships that may arise at the time of scanning answer sheets. The Commission thrives to achieve cent percent accuracy in this very delicate and sensitive process. Reconciliation of the number of Part A and Part B answer sheets scanned have been verified and tallied before processing further. The method for scanning answer sheets has been already intimated as reply to para 3.3.21. Mismatch of the barcode numbers in the event of duplication will be checked and similar barcode number discarded. For a particular examination separate series of answer sheets are used and the balance answer sheets if available will not be used for other examinations. Since the barcode numbers have been verified by the supplier, there is very little chance of any barcode duplication.

Para 3.3.27 Offsite preservation of backup data is now being implemented. Circular No. 32/2006, dated 8-9-2006 envisages the backup policy to be adopted in processing the data.

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Para 3.3.31 The purpose of computerization of Kerala Public Service Commission is mainly to expedite the recruitment activities. Scanning of applications and valuation of answer scripts through OMR machines paved the way for considerably shortening the period of finalizing the selection. Steps are also taken to minimize human involvement in the valuation of answer scripts and subsequent publishing of ranked lists. Pendency is now brought down to minimum through very effective utilization of REACT.

3.3.32 (1) Regarding the first recommendation in para 3.3.32 of the Audit report for the year ending 31st March 2005, all details relating to the valuation/scanning of answer scripts (A&B Part) like name of the post, department, date of examination, barcode numbers of the four alpha versions of key, total questions in the key, total marks for which the scripts are to be evaluated, bundle number of the scripts, total number of scripts in the bundle as reported by the Chief Superintendent of the centre, starting and ending scan numbers for the bundle, number of rejected/defective scripts etc. are recorded in the scanning log without fail. The rejected defective scripts are scanned with appropriate application in the scanning software and discrepancies if any, in the number of A and B parts are reconciled by the examination wing using various other examination related documents received from the examination centre.

3.3.32 (2) The Commission have an IT Strategy. The Commission have assigned specific duties to System Analysts. The computer system in Kerala Public Service Commission has two divisions. OMR Division and Electronic Data Processing (Application Processing) Division. the Divisions are under the supervision of the System Analyst.

The process of Computerization in Kerala Public Service Commission started during the period 2000-01 is an ongoing process. The process which comprises three phases out of which the first two phases have been completed and the third phase is nearing completion.

During Phase I (2000-03) the pre exam works relating to selection process in Kerala Public Service Commission such as

generation of admission tickets, computer verification of applications, Barcode reading, data entry etc. have been successfully implemented.

A total amount of 1 crore was allotted out of which 73.43 lakhs was utilized.

During Phase II post examination works such as preparation of Short Lists, Ranked Lists and extension of computer facility to all Regional Offices/District Offices, Upgradation of software were implemented.

During Phase III Software Development was on its last stage and hardwares purchased. Preparation of pay bill in Accounts section and processing of applications and generation of Hall Tickets in Departmental test were successfully implemented. Publication of Notification marks, Answer Key, Appointment chart etc. in the Official Website of Commission which enables the public to access relevant datas without delay. On line application facility introduced during 2007 by virtue which the candidates residing outside the state can submit their applications within the time limit. Online applications with photograph was introduced during March 2008. New Web mail facility implemented from April 2008 established the effective communication between the various offices of the Commission.

Phase III includes the publication of e-version of answer scripts in the official website of the Commission, section wise departmental computerization etc. which are in progress.

The rapid computerization in Kerala Public Service Commission has accelerated the selection process and the aim of the Commission is to reduce the time frame of publishing Ranked Lists to six months from the issuance of the notification by implementing extensive computerization and scientific distribution of work. Introducing Video conferencing facility between the Offices of the Commission is also targeted under the final stage of Phase III Computerization.

During 2004-05 1 crore was allotted out of which 71.32 lakhs were utilized. Internet connection to all Regional Offices and District Offices we done during this period. During 2005-06 1 crore was allotted 99.9 were utilized.

During 2006-07 an amount of 21 crores was allotted and 1 crore was utilized. Networking of Regional Offices, Head Office and District Offices completed during this period.

During 2007-08 an amount of 68.81 lakhs were allotted out of which 68.80 lakhs utilized.

During 2008-09 an amount of 99 lakhs were allotted and it is utilizing for strengthening the computerization in Kerala Public Service Commission.

Applications for many posts are now being processed online. Photo applications are accepted for smaller posts. Registers are maintained at each stage of application processing. Backups are taken on daily basis.

3.3.32 (3) *Security Policy User Categories*

Different categories of users with specific access permissions are maintained at each stage of application processing. Registers are also maintained for this purpose for conventional applications, data entry done by data entry operators (For online applications the data entered by the candidate himself). The applications entered are verified by the user with verified permission who can set a flag for rejection if any. These are finally checked and rejected (if required) by the users with Section Officer/Under Secretary permissions. Password Maintenance—Passwords are changed periodically to ensure security.

For physical access control the necessary entrance to the computer centre are strictly controlled and usage of equipments were limited for office purpose. The servers and other equipments are kept in a dust free atmosphere. Timely modification of circulars and issuance of new circulars regarding the IT. security policy will be taken and implemented by the Commission if found necessary.

3.3.32(4) The Commission have implemented an effective back up policy. Two copies of the computer stored information from various sections are collected from the server to a C.D. and transferred to the concerned Additional Secretary/Controller of Finance as per Circular No. 32/06. In the case of District Offices/Regional Offices the details are collected from Phase I server to a C.D. and kept under the safe custody of the concerned District Officers/Regional Officers. Proper Registers are also being maintained for the purpose.

In this context it is remarkable that, Kerala Public Service Commission was honoured with the National E-Governance Award for the year 2005 for Exemplary Leadership and ICT Achievement in effective functioning of the REACT And, in Kerala, it was only for Kerala Public Service Commission this award was given that year.

R. SULEKHA,

Additional Secretary to Government,
General Administration (Special E and E) Department,
Government Secretariat.

Statement of Action Taken Report on the Report of the Comptroller and Auditor General for the year ended on 31st March 2007 relating to IT Department

Sl. No.	*Audit Para No.*	*Audit Para*	*Action Taken*
(1)	(2)	(3)	(4)
1	3.5	**Integrated Payroll and Personnel Mangement System** *Highlights* Under the Integrated Payroll and Personnel Management System (IPPMS), a centralised database of over 5.25 lakh employees working in the Kerala Sate Governemnt Service in more than 100 Government departments is to be created by computerizing the entire payroll and personnel information related activities. Though as per the implementation plan, IPPMS was to be rolled out in all departments by April 2007 only 5,997 out of 5.25 lakhs employees were brought into the payroll system as of May 2007. Audit of IPPMS revealed various shortfall/ deficiencies, viz, absence of specific action plan for digitization of service records of 5.25 akh employees, absence of network connectivity for linking offices to access the system, discrepancies in employee data due to inadequate validation checks, etc. some of the important points are given below : The system was not implemented	**Integrated Payroll and Personnel Management System** IPPMS (subsequently name as SPARK) is a corporate software package for on line personnel and personnel management proposal for Government of Kerala. It required to capture different rules such as Kerala Serfice rules, Kerala Treasury Code etc. and required to cover mote 30000 Government Offices through out the state covering around 5,25 lakhs of employees. On evaluating the implementation experience in Government Secretariat and controlled roll out in a few more offices for exposure feedback taking a rescheduling of the target period of March 2007, as given in the implementation plan approved under MGP for the project, was felt very much necessary because of the following. (1) Data entry of 5.25 lakhs of employees can be done only with the involvement of personnel dealing with service matters in

(1)	(2)	(3)	(4)
		completely as the intra state connectivity was lacking and complete data had not been captured. (Paragraph 3.5.5.1) Digitisation of employees was not acheived within target period due to poor planning of Government. (Paragraph 3.5.5.2) There was no backup policy. Backup of server data. information crucial to employees. was not stored off-site. (Paragraph 3.5.5.3) Although Government decided (November 2005) to extend SPARK to other departments, testing and acceptance of the successful completion of the SPARK was not ensured before replication to other departments. (Paragraph 3.5.5.4) In the absence of any security policy the system was exposed to the risk of external threats. (Paragraph 3.5.6) Deficiencies in the system allowed the possibility of reprocessing of passed bills before encashment leading to the risk of double payment. (Paragraph 3.5.7.I)	each department/office. because ther are the people responsible for updating and managing the service matters, the entered data should be verified and certified by them. It is a time c onsuming work. (2) Since it is an online system, connectivity and networking required to be in place in more than 30000 offices. (3) A single project time estimated for all the 30000 offices cannot be accurate primarily because of the big size of the target area, and it also depended on the departments own IT related plans, progress of KSWAN etc. Such diversified sources of funds and efforts are to be taken into consideration in order to avoid duplication of funding and efforts in the case of networking, equipment purchase etc. (4) Project time estimation is directly related to the accuracy in keeping the schedule of implementation. It will be very difficult to keep a successful schedule for 30000 Government offices. (5) Proper reengineering proposals required to be worked out through in depth analysis and study.

(1)	(2)	(3)	(4)
		Inadequate validation controls in the system affected the reliability of the database and its usefulness for MIS. (Paragraph 3.5.8) Salary bills of Self Drawing Officers were not generated through the system. (Paragraph 3.5.9.3) Manual processing of part salary bills and arrear bills without upgrading the system involved the risk of overpayment. (Paragraph 3.5.9.4)	Based on the above aspects, the matter has been placed in the empowered Committee for E-Governance held on 11-6-2007. The committee reviewed the current status and various aspects of implementation and decided that all Departments shall be instructed to prepare plans for time bound implementation of SPARK in accordance with the Project Management Plan of SPARK. In consultation with KSITM, Government vide G.O.(Rt.) *No*. 152/2007/ITD dated 25-7-2007 has directed all departments to implement SPARK at their offices. The departments were also directed *to* prepare plans for time bound implementation of SPARK in accordance with the Project Management Plan. Arrangements have already been made by conducting a meeting of the PWD Officials, chaired by the Principal Secretary (PWD), to estimate the networking and hardware requirements in each departments, carrying out the work and continued maintenance through PWD electrical and electronics wings. Based on the above it is estimated that a further period of three years are required to complete the project.

(1)	(2)	(3)	(4)
2	3.5.1	**Introduction** Implementation of the Integrated Payroll and Personnel Management System (IPPMS), subsequently renamed as Services and Payroll Administrative Repository for Kerala (SPARK) was one of the 93 projects approved (November 2003) under the Modernizmg Government Programme (MGP) of the Government of Kerala. As per the Detailed Implementation Plan (DIP) for MGP, the project was to be rolled out in all departments by April 2007. SPARK development visualized repositories of Government employee details including service matters, salary accounts and payroll. The database resides in a Central Server at State Data Centre and Individual Departments/Offices are to access the server through internet wherever available or else through the Internet. The project is implemented in various departments jointly by the Information Technology Department and the Finance Department through the Kerala State IT Mission (KSITM) with the technical assistance from National Informatics Centre (NIC). The system has SQL Server as back end and ASP. net as front end.	No remarks
		Objective of computerization	No remarks

(1)	(2)	(3)	(4)
3	3.5.2	The objective is to create an IT enabled, comprehensive and logically centralized Government employee information system to ensure : (i) the availability of the required information to the authorities concerned in a pre-defined manner ; (ii) transparency with respect to employee matters, better and planned utilization of human resources, better and prompt services to the employees ; (iii) accurate and automatic payroll processing ; (iv) that the rules and regulations are uniformly applied to all employees thereby avoiding complaints and achieving better employee relations.	
4	3.5.3	**Scope, Objectives and Methodology of Audit** Records relating to pilot locations viz., Finance and General Administration Departments in Government Secretariat and the Commercial Taxes department; and one# out of two schools and one @ out of five Collectorates were examined by using Computer Assisted Audit Technique (CAAT). Adequacy of	No remarks.

Model High School, Thiruvananthapuram
@ District Collectorate, Thrissur

(1)	(2)	(3)	(4)
		general IT controls and application controls and effectiveness of the system with reference to defined objectives of computerisation was assessed.	
5	3.5.4	**Audit Criteria** • Project Implementation Plan • User Manuals, • Relevant provisions of Kerala Service Rules and Treasury Rules.	No remarks.
		AUDIT FINDINGS	
6	3.5.5	**Implementation** The project IPPMS formulated in 2003 was to be operationalised in December 2004. but development of software started with the sanction of funds only in July 2004. Implementation at the selected departments started in March 2005 and Government decided to implement the project in all other departments in November 2005. Audit observed the following:	No remarks.
7	3.5.5.1	The system was not implemented completely as the intra-state connectivity was lacking and complete data had not been captured. The facility of online transfer of salary bills to Treasuries for encashment	**Connectivity with Treasury** The status of data capturing upto date is approximately 1,50,000 and the salary of 44 offices (March 2008) are online now. Data capturing

(1)	(2)	(3)	(4)
		was also not made operational for want of connectivity with treasuries.	has progressed to a very good level and now about 1.5 lakhs of service books are digitized. KSWAN connectivity also progresses well. Connectivity at District level is established in January and 20% at Block level is also over. Block level connectivity through KSWAN could be finished with in 3 months and office level (in selected office) before September 2008. Action has been taken to test data transfer connectivity between Finance Department and Secretariat Sub Treasury. Necessary modifications in the Treasury Information System (TIS) to accept electronic data from SPARK and test data transfer between Finance Department and Secretariat Sub Treasury in a pilot phase and thereafter replicate the same in all the offices which are becoming online in SPARK is in good progress and is expected to be operational soon.
8	3.5.5.2	The project had envisaged complete digitization of the service records of all 5.25 lakh employees within one year. However, KSITM could arrange to capture data only in respect of 59,489 employees (11 per cent) by May 2007, after	The unavoidable administrative and technical factors that cause delay in data entry, has already been explained under para 3.5. However for better popularization and time-bound implementation of the

(1)	(2)	(3)	(4)
		spending Rs. 36.35 lakh (April 2007) which was in excess of the admissible amount as per the norms fixed in project plan by Rs. 22.35 lakh. Though data had been captured in respect of 59,489 employees by May 2007, salary bills were being generated for only 5,997 employees through the system (May 2007). Government stated (August 2007) that a rescheduling of target period of March 2007 was considered necessary as (i) data entry of 5.25 lakh employee details was a time consuming process (ii) connectivity and networking was to be processed in more than 30000 offices and (iii) it was very difficult to keep a successful schedule of implementation for 30.000 offices. Government also stated that the first phase of KSWAN would be completed by December 2007 and the Departments have been requested to prepare a timebound implementation plan and a further period of three years would be required to complete the project. This was an indicative of poor planning of the Government.	project, the meeting convened by the Principal Secretary (Finance) in his chamber on 4-7-2007 has decided to implement the project in all departments with the payroll management module first. Therefore the first phase data entry will also be limited to that the joint meeting of the Coordination and Technical Committee for SPARK held on 9-7-2007 has also recommended to implement the project in two phases. That is: Phase I: Payroll Management and Phase 2: Personnel Management. Digitization is now being planned from every district. In SPARK the whole data in the Service Book is captured through 24 forms. First phase data capturing can be limited to the forms required for registering the employee and processing the pay. The service history part and leave history part etc. that are the major portion of the Service Books can be captured in the next phase. In the case of leave, the total of Half Pay Leave (HPL) and Earned Leave (EL) as on date and Leave without Allowance (LW A) in effect etc are only

(1)	(2)	(3)	(4)
			required for the first phase. It shall not affect the data entry cost also as the cost can be assessed based on number of forms and year of the service of the employee. The above rearrangement will also make initial verification effective, as data can be verified in two phases. The matter is being processed in IT Department. The detailed note on time required for completion and reasons are given under para 3.5.
9	3.5.5.3	**Business Continuity Planning** Business Continuity Planning (BCP) is essential to ensure that the organization can prevent disruption of business and resume processing in the event of a total or partial disruption in the information availability. There was no backup policy specifying the steps to be followed in the event of a disaster or system failure. It was also observed that online backup of server data was also stored in the same premises. Employee information is a critical data which requires extensive backup and recovery strategies.	As SPARK being centralized system individual departments need not keep separate backup. Now there is SAN backup for SPARK. Additional backup listing tape is taken weekly and is in safe custody of System Administrator (SPARK). As per G.O.(Rt.) No. 163/ 2007/ITD dated 2-8-2007 Government have decided to establish Information Security Management System (ISMS) in the SPARK application and to get the application certified for information security as per ISO 2700. The process is in

(1)	(2)	(3)	(4)
		Government stated (August 2007) that additional backup in tape and off-site storage at KSITM was also planned and a recovery management plan would be drawn up.	good progress Back up and Recovery management policy is to be created by the implementation agency which will be at par with the international standards.
10	3.5.5.4	**Documentation** Testing and acceptance of application software, necessary for successful running of system was also envisaged in the Project. Although Government decided (November 2005) to extend SPARK to other departments, testing and acceptance of the successful completion of SPARK was not ensured before replication to other departments. Moreover, failure in testing successful completion of the SPARK was also evident from the fact that features like online acceptance of authorization data from Accountant General's Office and the facility to transfer salary bills to treasury in electronic format to facilitate electronic payment were not operationalised pending network connectivity. During March 2007, KSITM decided to conduct black box testing and system audit of SPARK. However, translation of decision into execution was wanting. Though the Government stated (August 2007) that action had	As per G.O.(Ms.) No. 32/2007 dated 10-12-2007 Motor Vehicles Department is selected for a full fledged implementation of SPARK. The full fledged implementation includes operational testing of personnel Management modules by connecting all the offices under Motor Vehicles Department to the SPARK System. KSITM has already engaged the services of STQC for conducting Black Box Testing, System Audit like Functio- nality test, Load Test, Usability Test and Application Security Test, Vulnerability testing on SPARK and STQC has already furnished an anomaly report on the first round of Functionality testing (March 2008) and the report is forwarded to NIC, the developer for rectifying the defects pointed out by STQC and the anomalies are being rectified. Regarding online data transfer to Treasury, please refer the explanation given in para 2 under 3.5.5.1

(1)	(2)	(3)	(4)
		already been taken to conduct the functionality test, operational test, load testing etc and also the facility for data transfer to treasury, the same were not done till October 2007.	
11	3.5.5.5	**Failure to carry out Business Process Re-engineering (BPR)** An IT project should not only replace a manual system but also bring about increase in efficiency through a process improvement. Government Order (November 2005) stipulated introduction of innovative methods of salary disbursement using facilities of modem techniques. However, no action had been initiated in this regard for want of a comprehensive study. Government stated (August 2007) that the strategy was to aid manual system, first be automating it to the extent possible and take up BPR later in a phased manner. Audit is of the opinion that such process change should have been considered before implementation and the system designed accordingly.	As the mandate of the SPARK application is to replace an age old, manual and very complex payroll and personnel administration system, re-engineering was taken up initially. The strategy was to aid the manual system first by automating it to the extent possible and take up BPR later in a phased manner. As a first and most important step, digital data transfer between Government Offices and treasuries have already been proposed and will be tested in a pilot phase in the Finance Department and Secretariat Sub Treasury shortly. After successful testing procedural changes can be effected. Formation for an expert group for proposing BPR to be done by ITD
12	3.5.6	**IT Security** In the absence of any defined IT security policy in connection with the implementation of	As per the recommendations of the joint meeting of the Co-ordination and technical

(1)	(2)	(3)	(4)
		SPARK, the users were not aware of their roles and responsibilities in relation to IT security. Though access to SPARK was mainly through the Internet, no password policy had been framed for implementation of SPARK. Although it was stated in the user manual (login procedures) that the initial password would confidentially be communicated to each user, it was found that the initial password allotted was encrypted only when the users changed their passwords. As the majority of users had not changed their initial passwords, the passwords were in unencrypted form and thus exposed the system to the external threats. Details of users' access to the System (login time and exit time) were also not stored appropriately.	committees for SPARK held on 18-9-2006 regarding the proper usage of the SPARK system was incorporated in the System Management Manual for implementing departments. The above manual is being communicated to departments while commencing the implementation of SPARK. These instructions are also being repeatedly reminded during each training session. The manual is also available in the info site for SPARK, that is www.info.spark.gov.in. In addition to the hard copy provided from KSITM, the departments are also down-loading the manual from the above info site. Password policy is already implemented in SPARK (September 2007). 128 bit encryption and data transfer on SSL mode (https) has already been incorporated w.e.f. July 2007. The detail audit trail system in SPARK application is also taken up separately.
13	3.5.7	**System deficiencies**	
14	3.5.7.1	**Failure to protect the bills generated** SPARK was designed to lock the bills automatically on passing the same by the Treasury Officer so as to	The concept of draft and final bill has now done away with. This is because the feature was not used by the sections

(1)	(2)	(3)	(4)
		prevent further changes and to restrict the double payment. In the absence of treasury connectivity, the bills were to be generated under draft mode. Once the payment was made by the treasury, these were to be marked as final by DDOs. During comparison of details as per Treasury records and bills available in the System it was found that the bills passed for payment were not marked as final and as a result those bills were cancelled and reprocessed after presentation to treasuries. Such reprocessing could lead to overpayment/short payment. During data analysis by audit, a case was noticed where a bill for Rs. 3,90,620 (gross) and Rs. 3,07,526 (net) presented to treasury by M Section of GAD on 22 March 2007 (cashed on 30 March 2007) was cancelled and reprocessed on 27 March 2007. As a result the bill particulars in the database stood changed as Rs. 4,06,922 (gross) and Rs. 3,23,145 (net) which did not reflect the amount cashed at treasury. Government stated (August 2007) that the concept of draft and final bill had been done away with and the generated bills would be locked on entering the encashment details. This would not solve the problem, as the cancellation	judiciously. Instead, the Regenerated bill will be locked in the following situation. (a) When the bill is passed by the treasury(when treasury starts using the system). (b) When the encashment details are entered by the section. The provision for locking the bills by the DDO will be incorporated in the application shortly.

(1)	(2)	(3)	(4)
		might take place even after presentation of the bill to treasury but before encashment. Unless there was a provision to lock the bills on passing the bills by the DDO, such serious lapse would recur.	
15	3.5.7.2	**Mismatch of figures in system data and treasury bill book** GAD started generating pay bills through SPARK from June 2005. A comparison of the figures in database with treasury bill book revealed that in 24 bills (for February and March 2007), the gross amount as per system did not tally with treasury bill book. The mistake was attributed to the reflection of recovery of festival advance as a deduction in system while in the bill generated it was shown as deduct-expenditure. The purpose of database is defeated as the gross amount of the bill did not reflect the correct position of disbursement. As Sections were not maintaining copy of bills, reasons for variation could not be ascertained.	The gross amount in the table is the actual gross earning of the employee. The festival advance is treated as any other deduction/recovery in SPARK. However, in the bill it is required to be shown differently for accounting purpose. However immediate action will be taken to discuss with the officials of Finance Department and AG's office to see whether any modification in the program is required.
16	3.5.7.3	**Inadequacies in the system** The system could not generate the following need based information : (i) The number of staff for whom salary was drawn in each	The provision will be included in the next version. The release of the new version on the application is kept in abeyance as recommended by

(1)	(2)	(3)	(4)
		bill cannot be verified from the System. (ii) The System lacked control to ensure that salaries for all employees are drawn every month unless withheld. (iii) There was no provision to limit salary claim to the sanctioned strength. Government stated (August 2007) that necessary provision would be included in the next version.	the STQC till the system audit /testing is completed.
17	3.5.8	**Input controls/Data validations** The objective of Input control s to ensure that the procedures and controls reasonably guarnatee that (i) the data received for processing are genuine, complete not previously processed, accurate and properly authorised and (ii) darta are entered accurately and without duplication. Data validation is a process for checking transaction data for any errors or omissions and to ensure the completeness and correctness of input. Data analysis revealed that there was no input control and the officers concerned failed to validate data leading to large scale deficiencies in the system affecting its utility as MIS as brought out in the succeeding paragraphs.	KSITM has already engaged the services of STQC for conducting Black Box Testing System audit like Functionality Test, Load Test, Usability Test and Application Security test, Vulnerability test on SPARK. STQC has already furnished an anomaly report on the first round of Functionality testing (March 2008) and the report is forwarded to NIC, the developer for rectifying the defects pointed out by STQC and the anomalies are being rectified. On completion of the STQC audit and testing all the data validation and input controls will be incorporated in the system in the next version and the deficiencies in the system will be rectified.

(1)	(2)	(3)	(4)
18	3.5.8.1	Permanent Employee Number (PEN), a system generated unique identification number, is allotted to an employee. PEN should invariably be noted in the resepctive SB on completion of data entry of each employee. A cross check of 277 employee data sheets with the Service Books (SBs) concerned revealed that, in 34 cases the PEN was not found noted in the SBs. It was also seen that three records for an employee were created. In six out of 203 data sheets cross checked in GAD, two PENs each were noted in the SBs of employees. The database included at least 373 duplicate records, which made the database unreliable. Government stated (August 2007) that strict instructions have been given to user Departments to avoid creation of duplicate records.	Strict instructions are given to the departments and additional training is already given to the department users on the operational problems.
19	3.5.8.2	Department Management User had the right for editing/deletion of the prime fileds of any record. However, the editing of data was done frequently by the users and thus made the data unreliable. Names of father, mother and PEN as per Service Book were different from those as per the database. it was alos seen from database that the name against PEN 1,01,757 has been replaced by “ABC” with all other details as that PEN 1,01.106. Though the SPARK system was designed with provision to disable such editing on generation of first pay Bill through the	Verification of data for its correction, vest with the concerned Office/Dept. The DMU has been given privilage for editing and Updation of data, which will be made strengthened for perfection of data.

(1)	(2)	(3)	(4)
		system, in the absence of certification of correctness of data entry, further editing of employee data had not been freezed. Government stated (August 2007) that it is not advisable to stop editing completely as there may be cases where some data has to be changed.	
20	3.5.8.3	Under SPARK, employees were grouped by department code, office code and bill code for the generation of pay bills. As the addition of new offices and office codes were not controlled centrally, there were 52 offices with multiple office codes within the same department. Similarly instances had also been noticed, where office codes were wrongly assigned. Government agreed to eliminate multiple/wrong entries (August 2007)	A software patch is under construction to remove multiple wrong entries and will be incorporated in the next version.
21	3.5.8.4	Some more inaccuracies in database were noticed in the absence of adequate input controls in the system. • Employee names were entered with upper case, lower case and also started with initials in some cases and end with initials in other cases. Moreover, there were mistakes in data entry in the crucial field of name of employee. • 'Father's Name' is a crucial field for identifying an employee. But in 10 cases in GAD, three cases in Finance and two cases in Collectorate, Thrissur, father's name was incorrectly entered.	Strict instructions are given to the user departments for careful verification of data. The anomaly report furnished by the STQC on the functionality testing has been forwarded to the developer NIC for rectification of defects (March 2008). The rectified software with all the data validation and input controlls will, be incorporated in the next version.

(1)	(2)	(3)	(4)
		• Date of birth in 10 cases was noted wrongly (2 January 1900 in five cases). • The database contained 11 records in Collectorate, Thrissur, where date of joining was recorded as 2 January 1900. In 14 records in GAD, five in Finance, two in Model HS and one in Commercial Taxes Department, the field 'date of joining service/department' had also been captured incorrectly. Government (August 2007) issued necessary instructions to the user Departments for careful verification of data.	Strict instructions are given to the user departments for careful verification of data. The anomaly report furnished by the STQC on the functionality testing has been forwarded to the developer NIC for rectification of defects. (March 2008) The rectified software with.
22	3.5.8.5	One of the objectives of SPARK is to serve as a service repository for Government of Kerala. This would require that every piece of information relating to each employee of the Government should be available in the database. However, audit scrutiny revealed that there were several mistakes in data entry in the fields relating to service particulars as shown below : • The database contained 5,140 designations in various departments, which included 58 duplicate designations in the same department.	A software patch is under construction to remove multiple wrong entries and will be incorporated in the next version. Additional training is already given to the department useres on the operational problem.

(1)	(2)	(3)	(4)
		• Mistakes were noticed in data entry relating to past services of the employees (five cases in GAD and three cases in Finance Department), leave particulars (25 cases in GAD and seven cases in Finance Departments) and surrender of leave (53 cases in GAD and 18 cases in Finance Departments). • Similarly, data relating to Leave Without Allowances (LWA), a crucial information for calculation of pay and allowances and qualifying service for pensionery benefits was also found wrong in GAD.	
23	3.5.8.6	The database included 177 records where age on the date of joining was less than 18 years. The age on the date of joining varied between 107 and 56 in 16 cases. In 84 cases date of joining was the same as date of birth. Hence the System could not be relied upon for calculation of qualifying service. As the System was designed to calculate the date of super-annuation (DOS) assuming the age of retirement as 55 and the field DOS was made editable, many mistakes in the date of superannuation crept in as under: (i) In the case of PEN 1,24,712, whose date of birth is 1 February 1972, DOS is entered in SPARK as 28 February 2027, as against 31 January 2027	Strict instructions are given to the user Departments for careful verification of data. The anomaly report furnished by the STQC on the functionality testing has been forwarded to the developer NIC for rectificaiton of defects (March 2008). The rectified software with all the data validation and input controlls will be incorporated in the next version.

(1)	(2)	(3)	(4)
		(ii) In 32 cases, date of birth was same as date of superannuation. (iii) In three cases date of superannuation was prior to date of birth. (iv) Age on date of superannuation as per the System exceeded 55 in 293 cases, of which 177 employees did not belong to the service category eligible for enhanced age of retirement of 60/70. Government stated (August 2007) that the required controls would be incorporated in the next version.	
24	3.5.8.7	'Stop salary' option was provided in the System to prevent generation of salary bill through SPARK, in case an employee is transferred to another office, where SPARK was yet to be introduced. 'Retire' option was used to prevent further processing of salary, when an employee retires from service. LWA option was used to restrict salary to duty pay as admissible. It was, however, seen that the users in different departments were using these provision differently as under : (i) Stop salary table contains 1329 records, where the reasons for stopping salary are recorded as 'transfer', 'inter-dept. transfer',	Additional training is already given to the department users to rectify the operational problems.

(1)	(2)	(3)	(4)
		'LPC issued', 'deputation', 'promotion', 'promotion as SO', 'Leave without allowance', 'suspension', 'superannuation' etc. No reasons were recorded in 66 cases. (ii) Retirement table contains only 15 records, though the database included 3556 employees who had crossed the age of 55. (iii) A scrutiny of the cases of stop salary due to superannuation revealed that the persons, who were not due to retire were also included in the stop salary table. For example, PEN 1,03,447 whose date of birth was recorded as 25 May 1975. Similarly as per Bill control table 8150 out of 10008 bills generated were cancelled for reprocessing of bills to rectify mistakes. As GAD, which started generating bills through SPARK during June 2005, had cancelled 431 bills for preparing 34 bills during March 2007, it is evident that 81 per cent bill cancellation is due to inadequate training. Government stated (August 2007) that additional training was being planned to address the operational problems.	
25	3.5.8.8	Database contained 47 records of bills with gross amount as zero, while the net amounts were not zero. In four cases gross, deduction and net were zero.	KSITM has already engaged the services of STQC for conducting Black Box Testing, System Audit like Functionality Test, Load Test, Usability Test and Application Security Test,

(1)	(2)	(3)	(4)
		Moreover there was no validation control to ensure that gross minus deduction tallies with the net. Government stated (August 2007) that the record with error was not removed from the system automatically on cancellation. However, the fact remains that the bills were not cancelled bills and the bills for the net amount were seen encashed though the gross amounts were shown as zero.	Vulnerability Testing on SP ARK and STQC has already furnished an anomaly report on the tirst round of Functionality testing (March 2008) and the report is forwarded to NIC, the developer for rectifying the defects pointed out by STQC and the anomalies are being rectified. The above defect is rectified in the next version.
26	3.5.9	**Other Points of Interest**	
27	3.5.9.1	**Upgradation of Service Books (SBs)** On commencement of onlinc processing of bills through SPARK, further changes in basic pay by granting of increment were updated by the system automaticall y on sanction. Though the training manual stipulated simultaneous updating of Service Books (SBs), a cross-check of data sheet with SBs in GAD revealed that the sanction orders of increments were not noted in the SBs. Dis-continuance of the manual system without rectifying the mistakes of data entry and without integration of the whole system by testing and acceptance of all modules, involved the risk of rendering the SBs unreliable.	It is the responsibility of the officials concerned in the user departments to ensure the correctness of data. Necessary instructions has already been given to all user departments for careful verification of data through System Management Manual for implementing Departments and to put proper supervisory mechanism in place.

(1)	(2)	(3)	(4)
28	3.5.9.2	**Failure to Update Pay Bill Register** A comparison of computer generated bill for the month of April 2007 and pay bill registers revealed that gross and net amounts as per SPARK generated bill did not tally with the corresponding figures in the pay bill register in respect of some of the employees in Collectorate, Thrissur. This showed that the manual bill register also did not indicate the correct amount of bill drawn through SPARK.	It is the responsibility of the officials concerned in the user departments to ensure the correctness of data. Necessary instructions has already been given to all user departments for careful verification of data through System Management Manual for implementing Departments and to put proper supervisory mechanism in place.
29	3.5.9.3	**Failure to process salary bills of Self Drawing Officers (SDO)** SPARK envisaged online updating of employee data relating to SDOs based on authorization issued by Accountant General (AG). SPARK has provision for processing of bills by SDOs by inputting the figures from the pay slip issued by AG. Processing of bills of all SDOs along with establishment bills would mean that Government would be able to monitor the expenditure incurred by each and every office. However, the number of SDOs processing their bills was found to be negligible. Though there are 729 SDOs in GAD, only five SDOs were using SPARK for generation of salary bill.	The STQC Audit has only completed the Functionality Testing (1st Round) and the anomaly report is forwarded to NIC, developer for rectification (March 2008). After the system audit is completed the enhancement of the capacity of the server is to be done and further large number of login ids needed for SDO's can be provided. .

(1)	(2)	(3)	(4)
		Government stated (August 2007) that large number of login ids could be allotted for processing SDO bills only after enhancement of capacity and laod testing.	
30	3.5.9.4	**Manual Processing of Part Bills and Arrear Bills** SPARK has enabled provision for processing of arrear bills, if the amount drawn relating to the period in question is available in the System; otherwise arrear bills are to be prepared manually and the relevant fields in SPARK in respect of the employees concerned are to be updated. It was seen that part salary bills were also prepared manually due to absence of provision to prepare salary in respect of the persons transferred from or joining the office during the middle of a month as one of the office is not online under SPARK. This might lead to overpayment of arrears. 107 Bills in February 2007 and 18 Bills in March 2007, included in treasury bill book of GAD, were not included in the bill control table of SPARK These were stated to be part bills and surrender bills. But none of the users updated the relevant fields in SPARK for want of follow up instructions. Government stated (August 2007) that necessary remedial measures would be incorporated in the BPR already commenced.	The strategy was to aid the manual system first by automating it to the extent possible and take up BPR later in a phased manner. As a first and most important step, digital data transfer between Government Offices and Treasuries have already been proposed and will be tested in a pilot phase in the Finance Department and Secretariat Sub Treasury shortly. After successful testing procedural changes can be effected. An expert group for proposing BPR well in advance will also be constituted. Necessary Remedial Measures will be incorporated in the BPR process.

(1)	(2)	(3)	(4)
31	3.5.10	**Conclusion** Though the project is under implementation for over three years it cannot yet be termed as reliable. Government stated (August 2007) that the implementation plan and system development were being fine tuned to ensure complete coverage of SPARK by December 2010.	From the expalnations as given above it is seen that SPARK is reliable system under proper usage. Continuous works for further modifications and developments are going on in full swing to find our possible bugs, prevent erroneous input of data and make the system more secure. The System Audit and Testing of the SPARK application and the implementation of Information Security Management System (ISMS) and to avail ISO:27001 certification process which is in good progress will make the application more secure and error free. The Implementation plan and the system development is fine tuned to ensure complete coverage by December 2010. Now the project is heading forward with a clear vision and time schedule. Therefore the audit paras may be reviewed based on the details furnished above.
32	3.5.11	**Recommendations** **The IT Department should** • select one or two departments, which have computerised all their offices and connected through WAN and bring all employees including SDOs of the selected departments under SPARK.	The salary processing module which IS comparatively easier to handle than the personal management module will be rolled out in all departments after incorporating necessary modifications based on the

(1)	(2)	(3)	(4)
		• take up further replication of the software in other departments only after testing and acceptance of all modules of the System, by adopting approved system methodology and introduction of digital signature for DDOs and SDOs. consider appropriate BPR to restrict the bill processing through the System upto block level. • amend relevant rules and orders in the Codes and Manuals to facilitate computerized billing and discontinue manual registers other than SB. Government agreed to adopt the recommendations and stated that the personnel management modules would be tested in two or three departments before State wide roll out and a comprehensive BPR would be proposed based on test experience.	comments of the AG's IT audit and the audit/tests by STQC which is partially completed. STQC has furnished the anomaly report after the functionality testing (1st round) and the developer, NIC is making the modification in the application (March 2008) The personnel management module will be tested in two or three departments like Motor Vehicle, Police and the Commercial Taxes before statewide roll out and based on the test experience a comprehensive BPR will be proposed.