2.3 Information Technology Review on the Computerisation of Tamil Nadu State Marketing Corporation Limited

Executive Summary

Tamil Nadu State Marketing Corporation Limited (Company) has the exclusive privilege of wholesale supply and retail vending of Indian Made Foreign Liquor (IMFL) in the State. IMFL is procured and distributed through its 41 depots across Tamil Nadu. The turnover of the Company was over Rs.10,000 crore and the Company was paying various duties, taxes, fee etc. To have better inventory control, disseminate timely information to the management, supply chain management and to ensure safety of the data at depots, the Company had computerised operations of all the 41 depots in FoxPro based application and the suppliers bill processing at Corporate office in Oracle based application in 1998. The Company decided to upgrade the hardware and software to Oracle platform in three phases (September 2001).

Planning

The Company did not plan the up-gradation to Oracle platform in a synchronised manner and there were delays in finalisation of tender and the selection of vendor in first two phases. The Company is yet to start Phase III of implementation at 16 depots which are still working with old software application.

Status of computerisation

Despite that there was no connectivity established between the depots & SRM offices and Company & Prohibition and Excise Department, the contractor was paid the full amount of contract. SRM offices per force prepared their report and sent it to the corporate office in Excel sheets. The Company did not have trained personnel to man the system and was dependent on the software developers.

System design

Audit noticed deficiencies in software design leading to necessity of manual interventions by passing the system. The deficiencies were noticed in mapping of accounting policies, tax laws and linking of master stock registers with physical stock.

Other deficiencies

The software was found deficient in the areas of input, process and output controls, ensuring date and time logic in the invoices, standardisation of the coding, validation and integration of data. The Company did not have long term IT plan or policy.

Conclusion

The Company failed to evolve a long term IT Plan with duly documented performance indicators. There was no in-house expertise to rectify the deficiencies in the software. The Company agreed to strengthen the system

Introduction

2.3.1 Tamil Nadu State Marketing Corporation Limited (Company) was incorporated in 1983 under the Companies Act, 1956 with Registered Office at Chennai. The Company has been granted the exclusive privilege of wholesale and retail vending of IMFL for the entire State of Tamil Nadu. The Company procures IMFL (including Scotch whisky) and BEER from various manufacturers and distributes the stocks through 41 depots situated in different parts of the State.

Organisational setup and business process

2.3.2 The Managing Director, assisted by three functional Chief General Managers/General Managers at Corporate Office, is the Chief Executive. In the field, there are five Senior Regional Managers (SRM) assisted by 33 District Managers (DM) managing 41 Depots. There were 6,706 retail vending shops under the control of DMs as on 31 March 2009. The procurement orders are processed centrally at Corporate Office and delivered by the suppliers at various depots which, in turn, distribute to the retail shops and directly sell to the clubs and hotels. The entire inventory management was monitored through specially designed software called Godown Monitoring System (GMS).

Development, Installation and Implementation

2.3.3 To connect all the depots with the SRM Offices as well as with the Corporate Office by a computerised network, the Company entered into an agreement with M/s Broadline Computer Systems in October 1997 to study the user requirement, suggest the required hardware, develop[1], install and implement the software and train its employees within six months from the date of the agreement. The work was completed in 1998.

Later the Company decided (September 2001) to upgrade the existing hardware and software (in FoxPro) to Oracle in a phased manner to improve inventory management and ensure the data security at the depots. The same was endorsed by the Government vide its Policy Note of the Prohibition & Excise Department for the year 2002-2003.

Audit objectives

2.3.4 A comprehensive review of planning and implementation of Computerisation of the Company was taken up to check whether:

- computerisation was carried out as planned and catered to the requirements;
- the computerisation could achieve the projected objectives without errors;
- the controls were in place and working;
- the integrity, security and confidentiality of the data was ensured; and
- business continuity plan and disaster recovery management were in place.

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[1]   1. Ordering Processing System 2. Quality Monitoring System 3. Bill Processing System 4. Stock Monitoring System 5. Regional Office Information System and 6. Financial Accounting System

Scope and Methodology

2.3.5   The focus was on conceptualisation and execution of the project with special reference to 'Godown Monitoring System (GMS)' for the period from April 2006 to March 2009. The methodology of audit involved:

- collection of background information about the system;
- review of System documentation and processes; and
- analysis of data – through CAATs;

Acknowledgement

2.3.6   Indian Audit and Accounts Department acknowledges the cooperation of the Prohibition and Excise Department and the Company in providing records and information. In the entry conference held on 16th February 2009, the Management was briefed of the audit objectives and methodology. On completion of audit, an exit conference was held on 20th October 2009 and the audit findings were discussed with the Management. The views expressed by the Management on the audit findings have been incorporated appropriately in this report.

Audit findings

Planning and implementation

2.3.7   Any system development includes a conceptual plan, detailed system study, formulation of system requirement specifications matching the user requirement specifications and a comprehensive system design document.

Lack of Planning

2.3.8   The Company decided (September 2001) to upgrade the existing software from FoxPro to Oracle platform in phased manner. However, the tenders for upgradation in 10 depots under Phase I was called for only in December 2002 and the orders were placed on M/s Broadline Computer Systems in March 2004 for supply of both hardware and software. This upgradation was completed in March 2005, after a delay of 42 months. Similarly, it was decided (April 2004) to upgrade the next 15 depots under Phase II. The orders were placed with M/s HCL for the supply and installation of hardware and M/s Broadline Computer Systems for software as late as in February and April 2007 respectively. The work in Phase II was completed in July 2008 after 51 months, mainly on account of delay in finalisation of tenders coupled with delay in procuring Oracle software. Phase III involving the remaining 16 depots is yet to be taken up and the process of upgradation remains incomplete.   This indicated deficient planning and the Company had not laid down any road map and time frame for implementation of the upgradation programme. The Company is still working with dual software. The Company, while admitting (November 2009) the facts, attributed the

delay to electrical related problems in depots and administrative delay to comply with the Government guidelines

The reply of the Company could not be accepted as the reasons were known and should have been dealt with even before the planning stage.

Computerisation at SRM Offices

2.3.9 It was envisaged in the agreement (October 1997) with M/s Broadline Computer Systems to develop and implement the software in 37 depots and 5 SRM offices in FoxPro platform. However, it was noticed that no such software was being used in the SRM Offices. There was no connectivity between Depots and SRM Offices (September 2009) also. The payment to M/s Broadline Computer Systems was made in full as there was no price break-up in the agreement for the computerisation component pertaining to SRM offices. In the absence of such software, the SRM Offices are preparing the required reports and forwarding them to Corporate Office in Excel sheets.

The Company, in its reply, stated (August/November 2009) that the FoxPro software was developed and installed at SRM Offices as well but was not in use since the computers had become outdated and necessary steps would be taken for installation of amended software. The reply of the Company is not acceptable as the same lot of computer systems are still working in FoxPro environment in 16 locations identified for Phase III upgradation. Also, test check in the SRM Office at Chennai did not indicate any such software or database having been used.

Continued dependence on software developer

2.3.10 The Company had not formulated any IT Policy and there was no separate wing in the Corporate Office supported by qualified personnel. Further it was noticed that the staff of the Company were not adequately trained to operate and maintain the system. This resulted in over dependence on the software developer and the Company could not ensure accountability for the deficiencies of the software as stated in the following paragraphs.

To overcome the problems faced by the depots, it was decided (June 1998) to deploy one programmer each in five SRM Offices through the software developer to guide and assist the depot staffs in operation of the computerised system for a period of three months. However, the engagement of the seven programmers was still (September 2009) continued. This indicated continued dependence on the software developer even after implementation.

The Company in its reply (August 2009) accepted the fact that it did not have the trained staff to operate the system and hence the dependence on the hired programmers. It is stated that the Company could have trained its staff instead of relying upon an outsider for its day-to-day operations for more than 11 years.

Connectivity between the Company and the Administrative Department

2.3.11 In order to modernise the excise administration, inter-connectivity between the Prohibition and Excise Department (P&E) and Company was considered essential. Hence a comprehensive plan of networking was

There was no connectivity of software between depots and SRM offices.

prepared in 2002. A payment of Rs.4.54 lakh was also made to M/s Broadline Computer Systems for developing software for inter-connectivity as well as for MIS purposes between the Company and the P&E Department at Secretariat along with tele-conferencing facility.

However, it was seen that there was no trace in the system for installation of such MIS software and the inter-connectivity was not supported by any data transmission during these years. In this context, it was also noticed that for this purpose, one programmer and one data entry operator were deputed to P&E Department (through outsourcing) by the Company from August 2002 onwards and the entire salary of these personnel was borne by the Company. In the absence of connectivity and flow of data from the Company to the department and vice versa for MIS purposes, the deployment of two personnel at P&E Department and payment of Rs.2.40 lakh annually from August 2002 by the Company lacked justification. Necessary action is to be taken for either establishing the connectivity or the Company should withdraw such support through outsourced personnel.

The Company stated (November 2009) that the payment to the software developer was not made for this purpose. The reply was, however, factually incorrect as the payment in this regard was made in two instalments of Rs.2.27 lakh each on 29.7.2002 and 9.1.2003 apart from incurring Rs.2.40 lakh annually for the outsourced personnel.

System Design

2.3.12 Deficiencies in the software design leading to manual interventions by-passing the 'Godown Monitoring System (GMS)' were noticed in the following cases:

Mapping of Accounting Policy

2.3.13 To support the accounting policy relating to inventory management on first in and first out, the batch number and date of manufacture must be entered at the receipt point in Goods Receipt Acknowledgement (GRA)[2] and at the selling point (Invoices to Clubs and Hotels /Stock transfer invoices to retail vending shops). However, it was observed that:

The software did not have the provision to capture the details of multiple batches of Goods receipt and despatch.

- GRA module had a provision to capture details of only one batch for an item. It could not do so if there were multiple batches for a particular item.
- the sale invoices do not have the provision to capture the batch details as well as GRA Numbers

This indicated improper mapping of business processes. In the absence of this, the age wise inventory, demurrage collectable on stock over 90 days, sediment stock, if any, were not ascertainable through the system.

The Company (November 2009) stated that action would be taken to feed batch details in the system. Further, it stated that FIFO system is adopted in respect of physical movement of stock. However, the same could not be

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2   Primary document to account for the receipt of goods at depots.

substantiated through the system in the absence of GRA numbers and Batch numbers of the product in the invoices.

Lab report

2.3.14 As a part of Quality Monitoring System, the software was designed to capture the details of Quality Report either from the local Suppliers or the Government Lab in case of import of IMFL from other states/countries. It was seen that these details were not captured in the system. An attempt was made by audit to enter the relevant data in the system and the system showed "Run Time Error" which indicated bugs in the software. Due to this deficiency, the users could not make any entry in this regard.

The Company, in its reply (November 2009), stated that all the consignments were subjected to lab test at supplier's point. It is, however, suggested that this fact may further be substantiated through a proper entry in the database, as envisaged, to ensure quality monitoring through the system.

Mapping of Tax Laws

2.3.15 As per the section 206C read with section 288B of Income Tax Act, the Company has to collect tax on sale of liquor to clubs and hotels and any amount payable under this Act should be rounded off to the nearest multiple of ten rupees.

It was, however, observed that the software rounded off the tax component to the next higher rupee instead of to the nearest multiple of ten rupees indicating incorrect mapping of tax laws in the software. This has resulted in excess collection of Rs. 91,753 through 25,896 invoices and short collection of Rs.22,138 through 11,446 invoices during the years 2007-08 to 2008-09 and the net amount has been remitted to the Income Tax Department.

The Company, while admitting the observation, stated (November 2009) that the software would be suitably modified.

Linking of Master Stock Register with Physical Verification module

The software has an edit option to account for the excess stock of physical verification into the master stock register defeating the independence of physical verification.

2.3.16 The Closing stock at the end of the each day is generated through Master Stock Register (MSR). This has been linked with Physical Verification Excess Entry Module (PVEEM) as opening stock of the next day. Further, the PVEEM has an edit option whereby the excess stock found on physical verification, if any, could be accounted by directly updating the stock in the MSR. The software system design as stated above is not correct to ensure the independence in physical verification. This indicated deficiency in the system design. Incidentally, an attempt was made in audit to overwrite the opening stock through PVEEM and the system accepted the entry, thereby, indicating the possibility of tampering with the records in MSR.

Input Controls and validation checks

2.3.17 Input controls and validation checks ensure the completeness, accuracy and reliability of the data. The deficiencies in this regard are detailed below.

Continuity in system generated numbers

2.3.18 The Indent numbers, GRA numbers and Invoice numbers were generated through the system automatically and hence the continuity of the numbers was required to be ensured. Data analysis showed that there was no continuity in such numbers during the years 2006-07 to 2008-09 as detailed below.

Name of the document	No. of gaps	Missing numbers
INDENTS	174	224
GRA	1,270	1,464
INVOICE	3,287	6,610

Apparently these were cancelled. There was no audit trail to watch the reason for such cancellation and no system was in place to prepare exception report to watch the correctness for such cancellation.

On this being pointed out, the Company stated that (November 2009) missing Indents/GRA/Invoices were due to the system failure and data entry error during preparation of invoices. It further stated that suitable instructions would be given to minimise the cancellation and also record the reasons thereon in the log book maintained for the purpose.

It is suggested that instead of resorting to cancellation and removal of the defective entries suitable indicators or flags may be added to such records by recording reasons thereon to have a fair audit trail through the system.

Breakage Loss

2.3.19 Losses due to breakages while handling the goods in the depot were collected from the contractors on real time basis. However, it was observed that the Company was accounting the breakage loss on ad-hoc basis. It is evident from the illustrative case mentioned below:

In a depot[3], 600 cases of Day Night Brandy-Medium-180ml were taken into stock account through GRA No.G01047067 dated 08.11.2005. Being a fast moving item, the product was procured on 66 occasions between November 2005 and July 2007 and issues were made during the period in various lot quantities. However, 205 bottles, that broke while handling on various occasions (69 events) during the same period, were treated as "Breakage Loss" against the goods received on the above mentioned GRA which was dated in November 2005.

The Company admitted the fact (November 2009) and stated that the selection of GRA is optional and the data entry operator selected this GRA by mistake for the loss of same brand/pack size. This clearly indicated the deficient input control for the data (though optional) entered into the system while accounting for breakages.

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3   Ambattur-I Depot

Coding of Master Database

2.3.20 The codes were assigned without following any standard rules/norms applicable for the data design and structure. This indicated absence of validation checks in the software as detailed below:

(a)   The system accepted entry of bank codes with lesser number of characters than the defined length.

(b)   The length of the customer code defined in the depot database and the corporate data base were different. This incompatibility deprived the corporate office from directly generating any report on customers.

(c)   There was no uniformity in the Codes, names and addresses of Clubs and Hotels maintained by the Company and that of the P&E Department. The license number assigned to Clubs and Hotels by the P&E department is unique and the same should have been adopted by the Company, to enable verification of sales made to a particular license holder.

The Company, in its reply (November 2009), stated that the validity of the license is ensured by the Excise Supervisory Officer (ESO) at the depots. However, it is reiterated that standardised formats would enable monitoring such licenses through the system and avoid human errors.

Sale of items which were not on stock

The software lacked validation checks to warn against invoicing the items not on stock.

2.3.21 It was observed that the following two items were invoiced as sold during April 2006 and March 2009 respectively though these items were not on stock during that period.

Item code	Godown code	Sale date	No. of cases sold	Sale amount (Rupees)
BEER7009	**0207**	**04/04/2006**	**25**	**20,400**
BEER8004	**0501**	**07/02/2008**	**3**	**2,880**

This indicated the lack of validation checks in the software to warn while invoicing the items which were not on stock. It is possible that the depot sold a particular item but recorded as having sold another item. The values of the two items need not be the same. Therefore, the lack of this control could lead to incorrect revenue to the Company.

The Company, in its reply (November 2009) admitting the omission, stated that the two instances are negligible while comparing the volume of the transactions. The reply is not acceptable as a validation check on available stock would avoid generation of incorrect invoices and accounting for incorrect revenue.

Sales to the customers without verifying validity of licences

2.3.22 Invoices to the customers[4] were generated through the Retail Invoice Module by linking with the customer details. During data analysis in the Chennai Region, it was observed that invoices were issued to 76 customers flagged as "Inactive" during the period from April 2006 to January 2009. Test check (September 2009) revealed that system generated invoice for a closed shop. This indicated absence of necessary validation checks. Further analysis showed that the details of renewal of licences had not been updated in the system.

The Company, in its reply (November 2009) admitting the fact, stated that it would modify the software suitably to give alert message while generating the invoices against expired licenses/ closed retail vending shops.

Bypassing the System Controls

Transport Permit

2.3.23 As per the extant rules, liquor cannot be transported without a proper transport permit indicating the quantity and item of liquor. Further, as per the procedure in vogue, only one invoice should be raised per customer per day. Hence, the software was designed in such a way that only one transport permit can be generated for one shop against one invoice on the same day. It was, however, observed that the system allowed generation of more than one invoice per retail vending shop on a given day indicating deficient business mapping.

In view of this, if more than one invoice was prepared as stated above, the quantities relating to second invoice were being written manually in the transport permit already generated by the system.

During data analysis of depots in Chennai Region for the years 2006-07 to 2008-09, it was found that in 22,490 out of 2,19,396 cases, no separate transport permits were issued through the system for the goods sent from the depots to Retail Vending Shops.

The Company, in its reply, admitted the omission and stated (November 2009) that such controls would be strictly implemented in future.

Output Controls

Vehicle unloading Report

2.3.24 In order to monitor the unloading process at the depots of the goods received from the suppliers, a report is generated through the system on daily basis. A review of the report revealed the following deficiencies:

  (a) The space for displaying the vehicle number in the report was insufficient and as a result the vehicle numbers were not displayed correctly.

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4   Retail Vending Shops, Clubs and Hotels

(b)   The time taken to unload was indicated incorrectly. For instance, the time taken for unloading is shown as 4.80 hours instead of 2 hours in respect of a unloading that commenced at 17.00 hours and ended at 19.00 hours,

(c)   The goods unloaded from one vehicle were clubbed with another vehicle resulting in incorrect report generation.

Thus this report could not be utilised for effective monitoring of the waiting time for each vehicle and the efficiency in unloading and reconciliation of stocks received supplier wise.

The Company admitted (November 2009) the facts and stated that it would carry out the necessary correction in the software.

Other Reports

2.3.25 The following discrepancies were also noticed.

(a)   The dates in the report for monitoring the collection details from the licensee were incorrectly displayed. i.e., date "10/02/2008" in the format 'dd/mm/yyyy' was displayed as 2 October 2008 in the report.

(b)   Totalling errors were noticed occasionally in exhibiting grand total while generating stock transfer invoices which were corrected later on by taking duplicate copies of invoices.

This clearly indicated lacunae in the output controls and required modifications in the present software. The Company, in its reply (November 2009), stated that the software would be modified accordingly.

Other Deficiencies

Comparison with annual accounts figures

2.3.26 In the GMS software, while receiving the goods at godowns, Goods Received Acknowledgement (GRA) was generated with the name of the supplier, indent number, invoice number, quantity received in good condition, *etc*. The payments to suppliers were processed based on this document. The total quantity purchased as per the system was compared with figures shown in the annual accounts for the years 2006-07 to 2008-09. The following differences were noticed in each year as detailed below which were yet to be reconciled.

Year	Product	Number of cases		
		As per Annual Accounts	As per Godown Monitoring system	Difference
2006-07	IMFL	27382579	27382694	115
	Beer	17629101	17629113	12
2007-08	IMFL	30926289	31043097	116808
	Beer	19866084	20106710	240626
2008-09	IMFL	35748054	35746037	2017
	Beer	22454431	22454731	300

The Company in its reply (November 2009) attributed the difference on account of transfer of data twice by the depot / non transfer of correct data to Corporate Office and stated that the necessary reconciliation would be done in the ensuing years.

Security Issues

Physical and Logical Controls

There was no password policy and system administrator to regulate the access to the system.

2.3.27 It was noticed that

- there was no password policy to regulate the access to the system. The access to the system was not controlled by user authentication procedures combined with proper access rights and authority levels.
- there was no System Administrator to regulate the access to the system and there were no audit trail in the system for correction/modification carried out in the system and hence the authentication of modifications made in the data could not be ensured.
- same user names and passwords were being used in all depots by all users
- no fire-walls, intrusion detection system was installed.
- the maintenance of GMS was outsourced to M/s. Broadline Computer Systems and the vital data stored in computers were accessible to them. This increased the risk to the data security.

The Company, in its reply (November 2009), stated that instructions have been issued for proper maintenance of logbooks and steps are being taken to form a computer wing with qualified personnel at Corporate Office.

Manual Interventions in system generated invoice numbers

2.3.28 The invoice numbers were generated automatically in the chronological order by the system along with system date and time. However, on a test check of data pertaining to depot[5], it was observed that in the invoices raised on 3rd January 2008 and 4th January 2008 for clubs and

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5 Thirumazhisai II Depot

hotels, the chronological order with reference to the time and dates was missing as detailed below:

Missing Time logic

Invoice No	Invoice Date	Invoice Time	Customer Code	Shop Number
S010253926	2008-01-03 00:00	12.19	0102197	16/94-95
S010253927	2008-01-03 00:00	12.22	0102198	7/97-98
S010253928	2008-01-03 00:00	10.11	0102692	735/TASMAC
S010253929	2008-01-03 00:00	10.13	0102688	727/TASMAC

Missing date logic

Invoice No	Invoice Date	Invoice Time	Customer Code	Shop Number
S010253936	2008-01-03 00:00	10.39	0102668	620/TASMAC
S010253937	2008-01-03 00:00	10.41	0102577	612/TASMAC
S010253938	2008-01-05 00:00	11.10	0102201	1/86-87
S010253939	2008-01-04 00:00	11.15	0102695	738/TASMAC
S010253940	2008-01-04 00:00	11.17	0102673	644/TASMAC

On a further scrutiny, it was found that the system dates were changed through manual intervention. Thus the data was vulnerable to manipulation. On a further analysis, 50 instances of such modifications of system dates through back end were noticed in January 2008 in the same depot. By correcting the system dates, the penalty leviable at the rate of Rs.1000 per day from the date of invoice to delivery date was avoided to be collected from these customers.

The Company, in its reply (November 2009), had admitted that the invoices were prepared for the next day by changing the date in the system in order to cater to the requirements of customers in the Chennai region. The reply was not acceptable as any change in the data at the back end would amount to tampering of data and could lead to frauds.

Transmission of sales data to Corporate Office

2.3.29 The daily sales figures from the Retail Shops through SRM and DM Offices were passed over the telephone to the Corporate Office thus reliability and confidentiality of the facts could not be assured.

It was also observed that the data from depots is transmitted every day to the Corporate Office as text files/zip files through internet using personal e-mail IDs registered with free mail services, which would result in data being stored in the foreign server and thus possibility of external threats to data would increase. It is also required that after such transmission, the data would be frozen and could not be altered. On a sample analysis of data relating to invoices of a depot[6] pertaining to the period from April 2006 to March 2009, variations in the number of records as well as the value of such transactions/invoices were noticed. This indicated corrections were done to the data maintained at the depots after transmission to the Corporate Office.

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6 Ambattur II depot.

The Company, in its reply (November 2009), stated that the instructions have been issued not to use personal e-mail ids for official purposes. However, it did not prescribe any alternate mode by which the data can be transmitted.

Business Continuity and Disaster Recovery Planning

2.3.30 With growing challenges and complexity of IT systems, every organisation should have a Business continuity plan to prioritise its key business processes, to identify significant threats and plan mitigation strategies. A documented backup policy involving storage both at on-site and off-site and regular restoration of back up data is also essential. It was, however, observed that there existed no business continuity plan or backup policy in the Company.

The Company, in its reply (November 2009), stated that necessary backup copies of Corporate Office data and the depot data are taken periodically and preserved in the Bank. However, audit observed that the backup was taken as one time measure in February 2009 relating to period from 1998.

Other Point of Interest

Modernisation and Improvement

2.3.31 As a part of modernisation and improvement to the monitoring mechanism, the Government, in its Policy Notes 2003-04, 2006-07 and 2007-08, had proposed to introduce a system of bar coding on IMFL/BEER bottles and outer cartons and computerisation of the Company's Retail Vending Shops in a phased manner. This was planned to trace the product from the manufacturing unit to the Company's depot and further down to the retail outlets, facilitating easy inventory management, ensuring automated billing in the retail outlets, prevention of sale of non-duty paid liquor and proper accounting of cash. However, it was observed that the Company is yet to make progress in this regard (September 2009). In the absence of bar code on the cartons and bottles, the Company is tracking the products through manual system.

The Company, in its reply (November 2009), stated that action has been initiated for Bar Coding and computerisation of Retail Vending Shops.

Conclusion

The Company failed to evolve a long term plan and strategy regarding implementation of the Computerisation programme covering their vast scale of operations spread throughout the State having a turn-over exceeding Rs.10,000 crore. This resulted in incomplete up gradation of the existing system. The Company could not develop adequate in-house expertise even after successful implementation of Phase-I & Phase-II and continued to depend on the software developer. Deficient input controls and validation checks made the data incomplete, incorrect and unreliable. Absence of computerisation in SRM offices and Retail vending shops led to manual intervention in getting the information needed. The Company

had failed to attach due importance to the data security and update the software, wherever malfunctions were noticed.

The Company, in its reply (November 2009) stated that the software is being updated as and when required and as a long term plan the Company would like to have a separate computer section with priority on data security. The Company also desired to take guidance from Audit on its future computerisation projects.

Recommendations

The Company should

- implement uniform software in all its 41 locations
- computerise the SRM & DM Offices & Retail Vending Shops
- build in necessary input and validation checks to ensure the completeness, correctness and reliability of the data
- develop in-house expertise to maintain the system
- take necessary action to protect the privacy and confidentiality of transfer of data through email
- lay down well documented Business Continuity and Disaster Plan

Considering the volume and value of the transactions and to achieve its mission, goals and objectives effectively, the Company may consider an integrated system for their IT environment.