MINISTRY OF STEEL

Chapter: X

Steel Authority of India Limited

CMO IT Enabled Systems in Central Marketing Organisation

Highlights

Absence of input and validation controls within the system resulted in data being unreliable.

(Para 10.5.1)

Lack of integration between CMOITES and Plant resulted in poor control in respect of excess despatches of material as against the movement plan.

(Para 10.5.3(ii))

The Company failed to adopt SDLC methodology to design and develop system which resulted in non achievement of primary objective of CMOITES even after a lapse of three years

(Para 10.5.4)

10.1   Introduction

Steel Authority of India Limited (SAIL), India's largest public sector steel manufacturing company, caters to the core sectors of the Indian economy like the Railways, Defence, and Power besides Automobile, Agriculture, Construction, etc. It produces 13 million tonne of steel per annum through its five integrated steel plants.

Central Marketing Organisation (CMO), the sales and distribution network of SAIL, comprises four regional offices, 34 branch sales offices (BSO) with stockyards, four branch transport & shipping offices, eight consignment agency yards, authorised distributors and conversion agents. SAIL's entire home (domestic) sale is conducted through CMO, with customers placing their orders at the different BSOs and the materials being delivered from the Plants to the BSO stockyard. CMO's Head Quarters located at Kolkata is headed by Executive Directors (ED) such as ED (Flat Products), ED (Long Products), ED (Transport and Shipping), etc., who supervise the entire domestic sale operations and report to the Director (Commercial) at SAIL Corporate office, New Delhi. The International Trade Division of CMO located at New Delhi looks after the overseas trading activities, mainly exports.

SAIL's IT vision aims to "Apply IT to achieve customer centric leadership, cost effectiveness and enhance profitability, product quality and stakeholders satisfaction by fulfilling information needs across the organisation".

Keeping this in mind the CMO IT Enabled System (CMOITES) was created in 2004 with the aim to provide CMO with "integrated, uniform, relevant, and up-to-date information system which gives power to make decisions at the right time".

The objectives of the CMOITES were:

(i)   To mechanise the manual functions – to get rid of manual ledgers;

(ii)   To provide accuracy in the data generated;

(iii)   To provide an integrated system at the branches and stockyards, sales resident managers, product management groups etc.;

(iv)   To speed up the operations and consolidation of various functions–trial balances, stock cum sales statement, etc.;

(v)   To improve the operational efficiency; and

(vi)   To better and faster the MIS.

The entire project was to be done in–house and was to be completed within 12 months when the on line operation was also to begin.

The existing Branch & Stockyard (B&S) system was to be completely redesigned and redeveloped. As against the present mode of decentralised operations, the proposed system would have a central database to be accessed by all the users for their operations. The disaster recovery site, which would be a mirror image of the main site, would become operational in case the main site became inaccessible due to any reason.

The Integrated Product Planning System (IPPS) would get integrated into the new application so that the planning and the new B&S System would have a central database.

10.2   Audit objectives

The broad audit objectives were to:

(i)   Obtain a reasonable assurance about the integrity of data maintained in CMOITES.

(ii)   Evaluate effectiveness of controls in the system

(iii)   Review the overall functioning of the system

10.3   Audit period and scope

The period of audit was from January 2006 to March 2007. The scope of audit was to review the IT policy and control environment of the auditee to assess whether the targeted goals had been achieved. This included review of the Software Development Centre (SDC) at Hyderabad as well as examining data of BSOs recording large volume of transactions.

10.4   Audit methodology

The audit methodology included:

(i)   Study of the documentation (User requirement specification, System requirement specification and other records) pertaining to planning and development of the software.

(ii)   Collection of information through questionnaire.

(iii)   Testing of control checks of the system (*using dummy data*).

(iv)   Analysis of offsite data extracted by the Management at the instance of Audit pertaining to all the Branch Offices (through CAATs*).* Data of all the BSOs received in respect of direct (from the plant to buyers) as well as stockyard sales for the period April 2006 to March 2007 was extracted from the CMOITE system through the audit module developed at the instance of audit by the SDC, Hyderabad.

10.5   Audit findings

10.5.1 Input controls and validation checks

Input controls ensure that the data received for processing is authentic, complete, has not been previously processed, is accurate and properly authorised and is entered accurately and without duplication. To ensure correctness and reliability of the data it is necessary to ensure appropriate data validation combined with input controls.

 During audit the following lacunae were observed:

Input controls

(i)   *Existence of duplicate all India party codes and party names*

The all India party code (AIPC), a unique *alpha numeric id* which identifies SAIL's customers on a national basis, was allotted by CMO Headquarters, Kolkata. As all transactions were done on the basis of AIPC, every AIPC had to be unique. However, it was found during audit that 591 parties had been allotted more than one AIPC. Lack of input controls led to presence of duplicate AIPC. In absence of a unique AIPC it was not possible to track all the transactions of a party on a national basis.

(ii)   *Abnormal credit limit*

Steel is sold in metric tonne (MT) and the approximate market value of lowest grade of steel was Rs.27,000 per MT. According to the Company's policy, credit limit assigned to parties was always in round figures in lakh. However during test check, it was also found that 11 parties had been assigned abnormal credit limits viz. Re. one only in the case of Advance Steel Tubes Limited and Assam Roofing Limited and Rs.26 only in the case of BHEL, among others.

Validation checks

(iii)   *Cheque & credit facility extended to blacklisted parties*

Test check revealed that four blacklisted parties had been given cheque facility and in one case the blacklisted party had even been extended credit facility due to lack of validation controls.

(iv)   *Movement plan*

The Movement plan for production dispatch was prepared in the system on the basis of the purchase order booking**.**

Analysis revealed that system accepted future dates as purchase order dates which resulted in date of entry of Movement Plan in respect of eight records (all relating to Rourkela Steel Plant) out of 43495 records being shown much before the date of the purchase order. The difference in dates ranged between 363 days to 1451 days. In five cases the year of purchase order were entered as 2010.

(v) *Offer letter*

The Offer Letter (OL) issued by the BSO in respect of material lying at stockyard states details of material available for sale and was valid for seven days from the date of issue of such offer. During analysis it was found that in one case the system accepted the validity of the OL as 31/03/2020.

(vi) *Invoices issued before railway receipt date*

In case of direct dispatch where material was directly dispatched to the consignee, a Railway Receipt (RR) was prepared at the plant which carried details of the material dispatched to the customer. As per the work flow, invoices were to be prepared after preparation of RR.

During audit it was noticed that in 18 cases invoice date was prior to RR date. The difference between invoice date and RR date ranged from 2 days to 40 days.

(vii) *Discrepancies in data*

While despatching the material from the plant to the stock yard, a Consignment Advice (CA) with details of the material with weight, description, destination, etc. is prepared and the material is loaded into the wagons and despatched. After the wagon is received at the Branch stockyard, a Wagon Arrival Report (WAR) is generated in the system. On receipt of CA at the BSO from the plant, the CA is linked with WAR and the material carried in the wagon is then entered into the system.

The 'Consignment Advice Date', thus, as per logical sequence of work flow and document creation must be a date preceding the 'Wagon Arrival Date'.

However, it was seen in audit that in 893 cases in respect of various branches 'Wagon Arrival Dates' were found to be before their 'Consignment Advice Date'. The delays ranged between 1 day to 362 days.

The test check revealed that wagons were being loaded and despatched and the CA were being prepared subsequently.

Thus, the data captured in the CMOITES was not reliable.

10.5.2 *Non mapping of business rules*

All the relevant business rules are required to be identified and suitably incorporated in the application to avail the benefits of IT and achieve objectives of computerisation. Data analysis revealed non mapping of business rules as detailed below:

Inadequate control over credit sales

The credit limits of the customers were defined in Credit Authorisation Memo (CAM) based on the Letter of Credit (LC)/Bank Guarantee (BG) submitted by the customer. To

maintain an effective check on the credit limit, the CAM module should reflect the exact credit limit of a customer taking into account the latest transaction made. However, during audit it was found that the system continued to reflect the whole CAM amount as opposed to the remaining credit balance that exists in the customer's account after some credit transaction. As such, balance credit limit of a customer as on date could not be ascertained.

Logically, CAM should be authorised as and when invoices are raised. However, it was noticed that CAM was authorised only after issue of intimation letter to the customers. On scrutiny of the data relating to credit sales for the period from January 2007 to March 2007 of nine BSOs, it was found that in 2554 cases, CAM was authorised after the date of issue of invoices. The delay in issue of CAM ranged between 8 days to 116 days.

The above mentioned delay in preparation of CAM could be avoided if the process of issue of CAM was done online from the plant so as to enable the customer to submit the LC/BG in time. Further, the release orders for lifting of materials indicating the details of LC/BG and CAM could be generated from the system instead of manual generation at present.

10.5.3 System design

Lacunae noticed in the system design are detailed below:

(i) **Home sales/T&S headquarters**

As per the Company policy, material found defective can be returned to the Company on two grounds: if it was found to be defective or else if the customer was unable to lift the entire material for some reason. Stock thus returned to Company's stockyard is called Material Diverted to Stockyard (MDSA).

However, no provision existed in the CMOITES system either to capture data pertaining to defective material or to distinguish between materials returned on grounds of quality complaints and material returned by customer due to paucity of funds or otherwise. The cost incurred in bringing the defective material back to the stockyard was also unavailable through the system. As a result, the management maintains 'Quality Complaint Registers' manually to determine the amount of material returned as defective and downgraded to a lower cost.

(ii) **Lack of integration between CMOITES and plant**

During audit it was seen that the plant and CMO were not on a common platform and the product code used by CMO and plant were also not identical owing to which data from the Sales Resident Manager, CMO could not be transmitted online to the concerned plant for preparation of movement/dispatch Plan. CMOITES did not have an inbuilt mechanism to highlight/draw attention in the event of dispatches being higher than a certain stipulated percentage of movement plan.

On a review of movement plan for the month of March 2006 in respect of Plate Mill (PM) Plates relating to BSOs Secunderabad and Trichy, it was noticed that against the 15609 MT as per movement plan 19755.657 MT of PM Plates were dispatched. The excess despatches were 27 *per cent* more as compared to movement plan.

There was an increase in price from 1 April 2006 and the effective increase in price of Plates was Rs.2700/- per MT considering the maximum rebate operated in March/April 2006. Hence it was evident that excess dispatches over the actual movement plan would have fetched additional revenue to the extent of Rs.1.12 crore (4146.657 MT @ Rs.2700/- per MT) if they were dispatched in April 2006.

(iii)   *Non adherence to Company's marketing circulars/policies*

The Company guidelines and circulars for its day to day functioning were to be incorporated into the system so as to ensure that the Company's stated policies/procedures were adhered to. Accordingly, every direct dispatch sale, credit or cash was to be covered by a financial arrangement. For credit sale, coverage should be by means of advance from customer/BG/LC, while   in respect of cash sale there should be a Permanent Financial Arrangement (PFA). However, system did not provide for capturing either the nature of the sale or the financial arrangement to classify the transactions.

(iv)   *Interest calculation done manually*

CMOITES has a module for interest calculation. However, interest calculations were done manually. The Company has a practice of not charging interest from its special customers like L & T and BHEL. In absence of provision in the system to charge interest in the case of special customers, the entire interest calculation for all other customers was done manually.

A test check revealed that in the case of direct dispatch after considering the payments adjusted through credit notes, 1387 invoices out of 65534 were found to be paid after 90 days. The delay in payment of invoices ranged between 91 days to 671 days. Although these invoices were under credit sale, there was no record in the system as to whether any interest, normal or penal, was recovered for delayed payment.

It was also noticed that under BSO, Madras invoices amounting to Rs.21.48 crore were outstanding between 99 days to 158 days against a particular customer. Similarly, in Calcutta branch one customer made late payments in case of 157 invoices, the delay ranging between 91 days to 140 days. Under BSO, Durgapur the delay in paying 14 invoices by one customer was between 138 days to 169 days.

The interest recovered from these parties was not clearly ascertainable as the system did not capture such details.

10.5.4 Lack of a focused IT plan

The implementation of an IT policy should integrate IT resources and the business processes of the Company so as to use IT to fulfill the objectives of the Company. The Company in its IT vision envisaged IT as a business enabler to achieve enterprise-wide integration, seamless global communication, speed and agility, management of information resources, creation of knowledge database and achievement of cost effectiveness by streamlining of business processes. Accordingly, IT plans were drawn up for CMO to achieve these objectives. However during the audit of CMOITES it was seen that:

No System Development Life Cycle (SDLC) methodology had been undertaken to design and develop the system**.** In absence of the URS and SRS, the entire business cycle of the

Company was not captured into CMOITES. Further, during discussions with SDC, Hyderabad, it was learnt that the existing B&S module had been adopted and implemented as such in the new CMOITES, as a result the existing lacunae of the B&S system were carried onto the CMOITES also.

As per the time schedule, the CMOITES project was to be completed and be online by end of 2004. However, a study of the system and project documents revealed that even after a lapse of three years, the entire COMITES system was not in place. Of the modules of CMOITES only the Home Sales module had been completed. The Transport and Shipping and International Trade division modules were yet to be completed, while in case of the Branch Transport Shipping, only stock accounting was done through the module. The HRIS module was functional only with respect to the preparation of payroll. Therefore, scope of the CMOITES was not fulfilled as there was no enhancement in the computerised systems compared to the B&S system.

10.5.5 *Maintenance of manual registers*

The stated objective of CMOITES was to computerise all manual operations. Though CMOITES was implemented in December 2004 still the Company was maintaining manual registers like credit sales register, quality complaints register, indemnity bond register, transportation/ handling bill register, railway receipt register. Thus, keeping manual records in respect of such vital areas was not only a duplication of the functions of CMOITES, but also revealed the incompleteness of the system and the Management's lack of confidence on the same.

10.6   *Conclusion*

SAIL implemented CMOITES with the aim of achieving an integrated, uniform and up to date system which would enable it to achieve customer centric leadership and enhance profitability.

However, the Company failed to undertake a SDLC approach to map its business activities. Incomplete mapping of business rules has resulted in a scenario wherein the entire activity of the Company has not been captured within the system, with the result that even after the implementation of CMOITES, various activities continued to be carried out manually. Further due to inadequate input and validation controls, reliability of the data could not be fully assured. Deficiencies, as pointed out by Audit, continue to exist in the system as a result of which the Company failed to achieve the stated objectives of CMOITES.

10.7   *Recommendations*

- Complete mapping of the processes and the rules into the CMOITES should be ensured.

- Manual interventions should be minimised.

- Input and validation controls in the system should be strengthened to ensure data reliability.

- The CMOITES and plant should be integrated to exercise control against the movement plan

The report was issued to Ministry (November 2007); its reply was awaited.

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