CHAPTER 2 : INDIAN CUSTOMS ELECTRONIC DATA INTERCHANGE SYSTEM

2.1 HIGHLIGHTS

Indian Customs Electronic Data Interchange System (ICES) envisages acceptance of Customs documents electronically and exchange of information electronically with other agencies involved in international trade.

Performance

- **Even after nine years the project is far from complete. Software has been developed for only 33 modules out of the envisaged 73. This resulted in non-realisation of some of the major objectives of the programme apart from unending liability towards monthly software development charges.**

(Paragraph 2.5 (a)(i))

- **Poor planning, inadequate allocation of resources and not following the well established life cycle of a computerisation project were essentially responsible for the delay.**

(Paragraph 2.5 (a)(iii))

- **No major gains in trade facilitation are visible since EDI connectivity has not been established and only a very small percentage of consignments are being cleared within the three days stipulated in Citizen's Charter.**

(Paragraph 2.5 (b))

Financial Management

- **Financial estimates both for the pilot and the All India projects had to be revised due to poor formulation of initial estimates, over-looking necessary ingredients of the project.**

(Paragraph 2.6)

Procurement

- **Optimum value for money was not realized due to procurement of underconfigured servers, accepting hardware without testing, failure to obtain price/technology advantage at the time of delivery and insisting on composite procurement of hardware and software.**

(Paragraph 2.7)

Implementation

- **The delay in completion of site preparation work resulted in delay in commencement of on-line operations in 22 locations, besides keeping hardware idle for periods ranging from 4 to 17 months, the department had to incur infructuous expenditure on maintenance of the earlier system.**

(Paragraph 2.8 (a)(i))

Economy

- **Incorrect estimation of the volume of documents to be handled at ICD Surat resulted in incurring infructuous expenditure of Rs.49.31 lakh towards site preparation work.**

(Paragraph 2.9 (a))

- **Imprudent selection of VSAT technology for large volume of data access led to infructuous expenditure of Rs.1.03 crore.**

(Paragraph 2.9 (b))

- **Non-invitation of open tenders for annual maintenance contract for equipments such as air conditioning sets, UPS, diesel generator, computer hardware/software etc. at Delhi Custom House resulted in avoidable expenditure of Rs.53.11 lakh.**

(Paragraph 2.9 (c))

Security

- **The department is yet to formulate a security policy identifying threat perceptions and safety measures. WORM (write once read many) optical disk installed in the servers has not been made use of.**

(Paragraph 2.10 (b) to 2.10 (c) (iv))

- **Failure to establish system controls like change of passwords at regular intervals, cross verification of data entered in the system etc., facilitated fraudulent payment of drawback of Rs. 1.95 crore at Delhi Custom House.**

(Paragraph 2.10 (e) (ii))

System Lapses

- **Incorrect/non-updation of drawback rates/import duty, absence of validation controls at the time of data entry and deficiency in software have resulted in leakage of revenue.**

(Paragraph 2.11)

2.2 Introduction

Titled Indian Customs EDI System (ICES), the all India computerisation of Custom Houses envisages acceptance of customs documents and exchange of information electronically in centralized/structured formats, integrating customs with other agencies such as Reserve Bank of India, Director General Foreign Trade, Custodians of Imports and Exports Goods and Regulatory agencies involved in international trade. Within the customs house, the documents would move from the desk of one customs officer to another in electronic form.

The main objectives of ICES defined by the Department were: (i) respond more quickly to the needs of the trade, (ii) computerisation of customs related functions including import/export general manifest control, ex-bond clearance of warehoused goods, goods imported against export promotion schemes, monitoring of export promotion schemes, (iii) reduce interaction of the trade with Government agencies, (iv) provide retrieval of information from other custom locations to have uniformity in assessment and valuation, (v) provide management information system for policy making and its effective revenue and pendency monitoring and (vi) provide quick and correct information on import/export statistics to Director General of Commercial Intelligence and Statistics. Initially, the Department commenced (January 1994) computerisation programme under ICES at Delhi Customs house as a Pilot project. In March 1996, it was decided to extend it to 20 other customs locations. Data for the clearance of customs documents is captured under ICES by two methods viz. (i) establishment of service centres in each custom location which would accept document from importers/exporters for data entry and (ii) transfer of data by importers/exporters from their premises in the prescribed format using a communication link.

The project has been successfully commissioned at 23 locations in the country covering all major ports, air ports, Inland Container Depots and land customs stations. The department has created an awareness for the acceptance and use of computer at the user level thus paving way for the smooth change from the traditional method of clearance of customs documents to electronic clearance. ICES promotes transparency by reducing arbitrariness and uncertainty in the processing of documents. There is an automated random allocation of electronic declarations to the Apparising officer. A declaration, once registered with the system, is handled on a first-come-first serve basis. At the time of declaration the validation features ensure that only valid data is accepted by the system and invalid data is rejected at the service centre. The system provides for management of parameters such as exchange rates, drawback rates, rates of duty on the basis of directories which are updated by the systems manager, thereby eliminating errors previously encountered in the manual processing of documents. A concept of `Green Channel' has been introduced which provides waiver of examination by customs on the basis of importers profile. The only interface between customs and trade is at the time of collection of goods.

As a part of envisioned move from customs control to trade facilitation the following measures have been adopted for streamlining the customs procedure under the ICES: (i) Elimination of divergent practices in the application of Customs Law and

Procedures at different customs stations by effective monitoring and analysis of the computerised data base. (ii) Minimised physical examination of goods by effectively using risk management based targeting techniques. (iii) The drawback payment system has been re-engineered to provide for direct disbursement of the amount into the exporter's bank accounts after the goods have been exported. Generally, the drawback is credited within 48 hours of the departure of the vessel or the aircraft.

2.3 Organisational Set up

The overall planning and implementation of the computerization programme was looked after by the Joint Secretary (Customs) at CBEC till June 1997. A Directorate of Systems (DOS), New Delhi was formed in July 1997 headed by a Commissioner (Systems), who is the nodal authority for implementation and monitoring of the programme under the supervision of Member (Customs). The DOS is assisted by Additional/Deputy Commissioners at Chennai, Mumbai and Kolkata Custom locations.

2.4 Scope of Audit

A comprehensive review of planning and execution of ICES was taken up to:

a) assess the effectiveness of the project in realising its objectives within the stipulated time frame,

b) confirm that standard good practices were followed to ensure that the project was executed efficiently and at least cost,

c) ascertain the adequacy and effectiveness of controls in the system.

For this purpose, records of the Directorate of Systems, CBEC were checked. In addition, Sea Customs, Chennai was selected for evaluating system controls. Information from other Customs locations was also collected wherever necessary. Findings are contained in the succeeding paragraphs.

2.5 Performance of ICES

(a) Slow progress

(i) Even though nine years have elapsed since the project was conceived in August 1992, it is far from complete. Its progress and current status are as under:

	Coverage of locations Under ICES	**Number of modules (Maximum:73)**
Up to 1996-97	1	25
1997-98	5	--
1998-99	9	--
1999-2000	4	--
2000-01	4	8
Total	**23**	**33**

It took four years to implement the pilot project. 22 remaining locations were covered in a staggered manner over five years thereafter. Likewise, out of a maximum of 73 modules required for covering all types of transactions, software was developed by NIC for only 25 in the pilot project. Thereafter only eight additional modules were taken up during 2000-01, leaving forty modules undeveloped. Some of the important modules which have not yet been covered are: (i) ex-bond clearance of goods under imports, (ii) goods imported under schemes like DEEC, EPCG, 100 per cent EOU, DEPB, (iii) unaccompanied baggage clearance, (iv) controlling of Import general manifest and transhipment of goods from seaports to various places, (v) final assessment of the provisional assessment done under the system for imports, (vi) internal audit module for exports, (vii) monitoring of import licence and export obligations, (viii) levy of anti dumping duty and (ix) incorporating sample test results under import.

The Department stated (October 2001) that only 23 modules remained to be developed. This does not take into account the 17 modules that were identified but not included in the MOU with NIC.

(ii) The slow progress had the following consequences:

(a) As of March 2001, only half the customs revenue comes through the ICES. This is particularly low in respect of Sea customs which accounts for a larger proportion of imports.

(b) The full potential of the system in monitoring and generating Management Information System (MIS) has not been realised. For instance, imports under export incentive schemes are yet to be covered. As such, the additional controls on monitoring export performance are not in place.

(c) Protracted and staggered implementation in an Information Technology (IT) project whose main characteristic is a high rate of obsolescence tends to cause further delays. For instance, had the project been completed before 2000, the delays in development and extension due to the project being put on hold to address Y2K could have been avoided.

(d) Failure to cover all the modules has created several problems. Some of these are:

i) While the system provides for provisional assessment, no record is maintained for tracking final assessment and collection of balance revenue. Test check in Chennai Sea Customs revealed that documents of two importers were being assessed provisionally since January 1996 and August 1999 through ICES. The final assessment (December 2000 – January 2001), which is yet to be accepted by the importers, was done manually only. This resulted in additional demand of Rs.27.75 crore remaining realised. The system fails to flag such delays.

ii) Statistics for submission to Director General of Commercial Intelligence and Statistics (DGCI & S) have to be consolidated manually at each

ICES location due to continuance of manual clearance of customs documents. This delays the process thereby depriving DGCI &S of timely MIS.

iii) Ex-bond clearance of imported goods whose incidence is generally quite high in Sea Customs continues to be done manually.

(e) The department continues to pay Rs.5.5 lakh per month to NIC for software development charges. The total payment on this account between April 1998 and March 2001 has been Rs.2 crore. This is being paid even though a one-time charges of Rs.2.10 crore had been paid to NIC for development of software for Delhi pilot project. The complete development of software being nowhere in sight, there is likely to be unending liability on this account.

(f) Continuance of manual assessment due to non-completion of software development under ICES resulted in loss of revenue of Rs.2.41 crore by way of service charges which would otherwise be collected from Importers/exporters for the assessment under EDI, besides non-fulfillment of objectives of paperless clearance of customs documents.

In response, the Department stated (October 2001): (a) There were discernible improvements in MIS as compared to the manual system; (b) Development of software for ex-bond clearance would take a long time; (c) Several changes were required in the software due to changes in computation procedure or introduction of new levies; (d) Efforts were being made to increase the proportion of revenue through ICES. The fact remains that the progress of ICES has been slow and behind schedule.

(iii) Audit analysis revealed that the following factors were largely responsible for this delayed implementation.

(a) The decision to go in for All India Computerisation of Custom Houses through National Informatics Centre (NIC) was taken in August 1992. However, no formal MOU was signed with NIC stipulating details of the task to be performed and their time schedule. The project was, therefore, left to adhoc target formulation and monitoring.

(b) Correspondence exchanged between the CBEC and NIC revealed that the department had almost entirely left the initiative to the NIC. In the Board, the task was assigned to the Joint Secretary (Customs) in addition to his own duties. The Directorate of Systems was established only in 1997. Allocation of trained human resources was obviously not commensurate with the ambitious project. NIC perceived this as a major impediment to the progress of the project.

(c) Computerisation programmes require adoption of a well established life cycle which includes a conceptual plan, a detailed system study, formulation of system requirement specification and user requirement specification and a system design document. This process ensures that the system, including both hardware and software, fully meets the present and future requirements of the organisation. This life cycle was not followed in respect of the ICES. Only an initial system study was conducted by the

NIC in December 1992 after which the project is being implemented on a piece-meal basis. For instance, of the 73 modules for which software was to be developed by NIC, only 33 modules were completed till March 2001.

(d) Even though the pilot project was delayed, concurrent action was not taken to prepare the other locations for replication. Consequently it took five years to cover the other locations.

(e) Connectivity within the Customs Department and between Custom Houses and other agencies was made integral to the project. Inadequate preparations in partner agencies has delayed the project and also rendered any firm estimation of the likely completion date impossible. Focus on computerisation of the processing of customs documents before venturing into EDI connectivity would have ensured early completion of the former.

In response, the Department stated: (a) Delay in signing of MOU was due to difficulty in estimating the requirements; (b) A system study was carried out (March – July 1994) besides the initial study (December 1992) and a System design document (SDD) was also prepared; (c) Concurrent action was taken for implementation of the project in other locations. Scrutiny of records, however, revealed that the Department had themselves felt (June 1997) the 'System Study report' prepared by NIC could not even remotely be termed as SDD and it provided various screen print outs which would be of interest only to a user/data entry operator. Moreover, SDD for exports is incomplete, while none has been prepared for imports. The implementation of ICES project in other locations over five years could not be termed as concurrent action.

(b) EDI connectivity not established

(i) An important objective i.e. establishing EDI connectivity between various agencies like Importers/Exporters, custodians, Director General of Foreign Trade, RBI, Export Promotion councils etc has not yet been achieved. Consequently the major advantage to be gained through trade facilitation and information sharing has not been realized.

(ii) Scrutiny of the records indicated that the department could not establish EDI connectivity due to the absence of the following capabilities (i) EDI front end PCs to provide internet protocol address for identification (ii) customised EDI software to check the validity of the message received and transfer the data for further processing to the customs server and (iii) intrusion detection system like firewall software to monitor the incoming messages.

In response the Department stated (October 2001) that EDI connectivity required preparedness of all the partners and it is under various stages of implementation.

(c) Faster clearance not visible

One of the major objectives of ICES was faster clearance of import/export consignments. An analysis made by Audit of the Bills of Entry filed at Chennai Sea

Customs and JNPT, Nhava Sheva during the year 1999-2000 revealed that only 12 percent and 9 percent of the bills respectively were cleared within the 3 days stipulated in the Customs Citizen's Charter. Thus, the project had not realised the objective of enabling the department to fulfil its commitment to Trade.

The Department stated (January 2002) that the time taken in actual clearance of documents depends on a number of factors including time taken to pay duty and it would be incorrect to put the onus of delay entirely on Customs. They also stated that a study conducted by them covering a period of two weeks in March 2001 at Chennai Sea Customs revealed that the average time taken to assess a Bill of Entry/Shipping Bill is 2 days and 0.31 days respectively. The reply of Department has to be viewed in the context of it being based on only two weeks performance in a year at only one port as against the audit conclusion based on a whole year.

(d) Personnel not equipped

The department has failed to train its personnel in adequate numbers to progressively become self reliant. Even though the CBEC had decided (August 2000) to monitor progress in computer training on a monthly basis, the department failed to furnish details of the personnel trained. Test check of records at Chennai Sea Customs by audit revealed that the progress was rather inadequate particularly in Group A and Group B cadres. The training imparted was mostly for three days duration that too in computer awareness and basic applications. This resulted in continued dependence on NIC for which the department had to pay Rs.2.71 crore between April 1998 to March 2001.

The DOS stated (October 2001) that handling of an online mission critical application like ICES could be done only by a professional IT vendor and advanced training to selected departmental officers would aim at complementing the role of professional IT vendors only. The reply is not tenable in the context of Department's intention to move towards a 'regime of paperless electronic commerce with least human interface'. This would require complete system familiarity of all the officers and staff.

2.6 Financial management

A total amount of Rs.87.41 crore has been incurred on this project till March 2001. Audit scrutiny revealed that the financial estimates were not prepared with due care resulting in wide variations between estimates and expenditure. A detailed analysis follows:

(a) Delhi pilot project

The Delhi Customs house project was estimated (January 1994) at Rs.4.24 crore (hardware Rs.2.14 crore; one time software development Rs.2 crore and training Rs.0.1 crore). In March 1996, the department revised the cost to Rs.8.46 crore, an increase of 100 per cent. Audit scrutiny revealed that the initial estimates had not been prepared

with due care since these did not include (i) the cost of introduction of remote electronic data interchange though already decided earlier in September 1993, (ii) complete hardware requirement and (iii) site preparation cost. Keeping the initial estimate below Rs.5 crore resulted in going ahead with the project without obtaining prior approval of Committee on Non Plan Expenditure (CNE) which the project really required.

The Department stated (October 2001) that a case for CNE approval was not made out for the pilot project because (i) one time software development charges was common and it should be distributed over all the ICES locations, (ii) the increase in hardware cost was approved by Secretary (Expenditure) who happened to be the Chairman of CNE and (iii) the cost of site preparation work would not form part of the project cost. Reply is not tenable as the cost of a project should take into account all types of expenditure. An increase in expenditure by 100 per cent was a reflection on poor estimation of project cost.

(b) Other locations

(i) In December 1995, the Department of Revenue decided to extend ICES to another twenty locations. Accordingly, approval of the CNE was obtained (March 1996) for a total estimated cost of Rs.64.19 crore including Hardware: Rs.43.67 crore; Site preparation; Rs.19 crore and Connectivity: Rs.1.52 crore to be completed in eighteen months. In spite of the fact that there was a downward trend in the prices of hardware in the market, the estimated final expenditure incurred for the ICES project (excluding Delhi pilot) increased to Rs.78.95 crore as detailed below:

(Rupees in crore)

Items of work	Estimated cost as approved by CNE	Expenditure	Increase (+)/ Decrease(-)	Reasons
Hardware	43.67	32.85	(-) 10.82	Fall in prices despite increase in number of sites and quantity tendered
Site preparation	19.00	20.20	(+) 1.20	Increase in number of sites
Connectivity	1.52	20.30*	(+) 18.78	Contemplation of EDI Gateway due to non-establishment of EDI connectivity
Application Software	--	3.01	(+) 3.01	Procurement of Oracle software not envisaged
Development of Software	--	2.00	(+) 2.00	Continued payment of software development charges against one-time payment agreed earlier
Message exchange server	--	0.40	(+) 0.40	Contemplation of EDI connectivity between custodian and custom location
Tele-enquiry system	--	0.19	(+) 0.19	Provision of tele-support for the status of clearance of documents
Total	**64.19**	**78.95**	**(+) 14.76**	

(ii) It is apparent that there was wide variation between items of work projected in the paper put up to the CNE and the actual expenditure finally incurred. Some of the major factors responsible for this are: (a) even though EDI connectivity was central to the ICES, adequate provisions were not made in the CNE paper of 1996 on this account. As a result, another proposal had to be mooted in October 2000 for Rs19.27 crore, (b) no proposal was made in the CNE paper for software, either application or

development. Eventually savings due to the global decline in hardware prices enabled purchase of software without seeking additional sanction.

The Department stated (October 2001) that (i) expenditure for application software was due to inability of NIC to supply the same, and (ii) the cost incurred on message exchange servers (MES) and Tele-enquiry system are for clearly defined purpose besides the investment to be made is below the limits prescribed for the approval of CNE. Reply is not tenable as the implementation of MES is an integral part of EDI connectivity.

2.7 Procurement issues

(a) Procurement of under-configured servers

Audit scrutiny of the relevant records revealed that the department procured under configured servers as is evident in the following:

(i) The Tender specification (July 1996) in respect of hardware for other locations prescribed a response time of three seconds for an estimated Transaction Processing Council – A Grade benchmark rating of 200+ to 600+ transactions for online data entry, queries, precedent search on a database size of 2 to 8 GB for the servers to be procured. Audit scrutiny of the minutes of the technical evaluation committee revealed that they had computed the average normalised transaction time of the best bid (M/s.WIPRO Infotech Group Limited) with a database size of 2 GB at 53.70 minutes. Neither the details of computation of average normalized transaction time nor the inputs considered for its calculation were made available to Audit. It is, therefore, not clear as to how the bid of M/s.WIPRO Infotech Group Limited was accepted even though it did not meet the technical requirement.

(ii) Audit enquiries regarding working of the System at Chennai indicated that the server was not equipped to handle the volume of work as (i) some of the users have to be de-linked from the System during peak hours, (ii) statistical reports have to be generated after office hours and (iii) slowing of the system while capturing of data relating to Import General Manifest (IGM) through floppy submission.

(iii) The utilization of the total hard disc storage capacity in seven locations varied between 60 and 81 per cent even though a substantial proportion of the work was still being done manually. In two other locations viz. Sahar Air Cargo and Patparganj, the hard disc capacity had been increased by 6.1 times and 1.8 times respectively within three years of commencement of online operations.

(iv) No provision was made in the software to have audit trails for history database.

(v) Data was being archived to a standby system in view of system performance.

(vi) 'Autosecure', a software to create log files recording the transactions carried out by the System Manager,could not be implemented due to the debilitating effect on the efficiency of the system performance.

(vii) The volume of documents which were a critical determinant of hardware/software capacity were grossly underestimated. Details gathered in 12 ICES locations indicated that the volume of documents handled exceeded the estimation by 19.2 to 227.4 per cent in seven locations as detailed in **Annexure I**.

In response the Department stated (October 2001) that : (i) No officer from CBEC was involved in the technical evaluation; and (ii) The doubling of data volume and addition of new modules affected the system response.

(b) Acceptance tests not conducted

The department did not conduct acceptance tests for the servers supplied by M/s.WIPRO Infotech Group Limited to prove the performance for the complete functionality of the System with reference to bench mark results obtained at the time of technical evaluation as stipulated in clause 7.9 of Section 3 of the General Conditions of Contract in the Tender specification. This is a critical control in IT procurement requiring scrupulous adherence. While conceding that acceptance tests were not carried out, the Department stated (October 2001) that deterioration in the performance of servers was largely due to increase in the load.

(c) Failure to take advantage of contractual provisions for getting state of the art technology

(i) While finalising the contract in January 1997 the department did not specify the time schedule for the supply of hardware by M/s.WIPRO Infotech Group Limited. The orders were placed under the contract for twenty three locations spread over five occasions between March 1997 and March 1999 due to delay in site preparation work. Clauses 12, 36 and 35 of Section 3 of the General conditions of the contract in the tender stipulated that the hardware supplier would supply the current models, incorporate all the improvements in design on account of advancement in technology and reduce the prices when there is reduction in the prices.

(ii) Audit scrutiny of the invoices available in the records revealed that the supplier delivered between March 1997 and March 1999, 1275 numbers of P120 Mhz based personal computers with configuration of 16 MB RAM/1 GB Hard disk/1.44 MB FDD/14" mono monitor at Rs.43423 per PC as originally stipulated in the tender. Neither the supplier made available the latest hardware configuration that were available in the market, nor was the benefit of reduction in the prices of hardware due to downward trend in prices passed on to the department.

(iii) Further scrutiny by Audit with reference to the records of the same supplier indicated that M/s.WIPRO had supplied higher configuration PCs viz PC 233 Mhz 16 MB RAM/2.1 GB Hard disk/1.44 MB FDD/14" mono monitor to M/s.S.Kumar Computers, Gujarat at a cost of Rs.27,800 per PC during February 1999. By supplying

the PCs at the contracted price rather than at the prevalent market price the supplier failed to comply with the contractual provisions. The department also failed to monitor the market trends to enforce the contractual provisions. They could have saved Rs.1.07 crore and obtained PCs with higher specifications. Assuming a similar down ward trend in prices of servers, another Rs.1.39 crore could have been saved.

The Department, in their reply contended (October 2001) that configuration of machines were enhanced to the latest at the time of ordering and in particular the PCs received in the last order in March 1999 was of higher configuration with colour monitor. Audit scrutiny of all the invoices raised by the supplier till March 1999 clearly indicated that the supplies were with the configuration based on the contract finalised in January 1997. Similarly, the order issued (March 1997) to the supplier about the configuration of P120 MHz based personal computers also specifically stipulate the supply with 14" mono monitor for a unit price of Rs.43,423 only. Hence the contention of the Department is not tenable.

(d) Insistence on composite procurement of hardware and software for EDI connectivity leading to excess expenditure

(i) The Department initiated (February 1999) a proposal for introducing EDI/E-commerce services under EDI Gateway project on a single point access at Delhi for the whole country. The Notice Inviting Tender stipulated that the vendor should provide (a) Gateway servers for handling of messages to be interchanged among the trading partners, (b) firewall intrusion detection system for monitoring network management system, (c) various servers to provide different type of gateway functions like Email, Internet facility and certification, (d) operating system and application software like oracle (e) development software for message handling and its validation before transfer to the customs servers for processing and (f) communication connectivity through Internet Service Provider (ISP) as well as taking leased lines from DOT. Tenders were invited in January 2000. The proposal, involving a financial outlay of Rs.19.27 crore (Rs.13.53 crore for Hardware and software including payment to Internet Service Providers; Rs.4.75 crore for the cost of leased lines payable to DOT for three years for interconnectivity between Customs locations; Rs.0.99 crore towards unforeseen expenses), was approved by CNE in October 2000.

(ii) No reasons were found on record for going in for a complete solution from a single vendor. This however restricted the response as only five bids were found technically acceptable. Of the five short listed tenderers, only two were considered responsive to the commercial evaluation. This could not be considered as a competitive biding process. If hardware and software were separately tendered the response would have definitely been higher in both categories enhancing cost effectiveness.

(iii) In so far as software is concerned the bid of M/s Global at Rs.2.80 crore was much lower than the bid of Rs.5.48 crore of M/s Wipro. The latter was finally awarded after negotiation at Rs.3.75 crore. This was done by reducing technical support from 3 to 1 year and accepting lower power units of oracle software; but for these changes the bid would be Rs.4.95 crore. The Government would have saved Rs.2.15 crore if the software order was separately invited and awarded to the lowest bidder.

In response, the Department stated (October 2001) that multi-vendor system might affect timely completion and result in cost overrun besides difficulty in fixing responsibility on any particular agency and the final analysis of the Committee for evaluation of the commercial proposals disqualified M/s.Global on several counts. The response of the Department is presumptive. In any case, the disqualification of M/s.Global on various counts was not due to software related issues. As such the software could have been procured from them.

2.8 Implementation issues

(a) Delay in commencement of on-line operations

The Delhi pilot project was to become operational for on-line assessment by 1 September 1994. Against this schedule, NIC placed orders in September 1994 for hardware procurement with HCL. The on-line assessment for import and exports clearance at Custom House, New Delhi was made operational only in May 1995 (8 months delay) and May 1996 (22 months delay) respectively due to delay in software development. Moreover the on-line operations were commenced only for a few customs functions.

(i) Idle equipment

Of the 23 locations taken up during extension of the ICES, the Department commenced on-line operations in 22 locations after a delay ranging from 2 to 31 months mainly due to delay in completion of site preparation work entrusted to M/s. CMC Limited. The delay was 12 months and above in 13 locations. Consequently, the hardware procured was kept idle for periods ranging from 4 to 17 months. The idle investment varied between Rs.0.54 crore and Rs.3.79 crore for the above locations. Besides, the annual maintenance contract both for hardware and software for the existing spherry computer system had to be extended in six locations for hardware and two locations in respect of software for varying period ending between March 1997 and March 1998 at an additional avoidable expenditure of Rs.1.17 crore (Hardware maintenance Rs.1.08 crore and Software maintenance Rs.0.09 crore). In Bombay Sea Customs, the Department placed orders for 82.6 per cent of the total work for site preparation between August and November 1998, while orders for procurement of hardware were issued in January 1998 itself indicating non-synchronisation of related activities in the project implementation. Of the remaining two locations, while the hardware procured for Inland Container depot (ICD), Surat was diverted to other existing ICES location, the hardware procured for Mulund at a cost of Rs.54.84 lakh in March 1999 has been diverted to Mangalore and Raxaul where the on-line operation is yet to commence (September 2001). Thus, the hardware procured in March 1999 is still lying idle.

(ii) Delay in remittance of revenue collected under ICES

Scrutiny by Audit of the customs duty collection through ICES at Sea Customs, Chennai for January to March 2000 revealed that despite introduction of ICES the designated branch viz. Indian Bank was taking 3 to 6 clear days after excluding the date

of collection and the following day. The delays in remittance to Government account vitiates the objective of introduction of ICES for faster collection of revenue. It is likely that such delays take place in other locations too.

2.9 Economy issues

(a) Incorrect estimation in the volume of documents to be handled at Surat

The inclusion of a Customs location under the ICES was based on the estimated volume of documents. The proposal indicated an estimated volume of 32500 (250 days X 130) for Surat. The actual volume of documents (Both BEs and SBs) handled at Surat was 1995 in 1997-98, 969 in 1998-99 and 748 documents in 1999-2000. The hardware procured for this location was therefore diverted to another location and the assessment continued to be done manually. However, the site preparation work at ICD, Surat had already been entrusted to M/s.CMC Limited in May 1997 at a cost of Rs.49.31 lakh which became infructuous.

(b) Connectivity through VSAT infructuous

To provide interchange of information between custom house agents through NICNET and also retrieval of data from database of other Customs/Excise Commissionerates, the Department proposed (August 1992) to avail Very Small Aperture Terminals (VSAT) connectivity. Accordingly, the Department paid Rs.35.47 lakh (March 1997) and Rs.67.56 lakh (March 1999) to NIC for availing VSAT connectivity for 7 and 12 locations respectively. The VSATs were installed between July 1997 and March 2000. The department soon realised that the VSAT connectivity did not fulfill all their needs due to throughput problems for the large volume of data access. These were, therefore used for the troubleshooting work of the software development team and distribution of software amendments/patches to various ICES locations.

Audit examination of the issues revealed that (a) use of VSAT for multisite interconnection for large data access is not considered a prudent option and (b) satellite technology has limitations that disqualify it from interactive applications (such as ICES). In other words the VSAT option was abinitio incorrect leading to infructuous expenditure of Rs.1.03 crore.

The DOS replied that the limited bandwidth available in VSAT technology was known and would be overcome after the commencment of the proposed electronic commerce platform under EDI gateway and VSAT would be used as a limited back up for the proposed EDI gateway connectivity. They also stated (October 2001) that the decision was guided by NIC. However, the fact remained that selection of VSAT technology for large volume of data access was imprudent. Its potential as a backup is therefore limited.

(c) Avoidable expenditure on Message Exchange Servers

Even though a separate proposal for a single EDI gateway through Delhi was mooted in October 2000, the department proposed installation of message exchange servers (MES) in two locations at a cost of Rs.40.46 lakh for handling messages between the local agencies functioning within the custom house as well as between custom house and the gateway. The scope of the work included supply of a server, unix operating system software, pentium PC for EDI front end*, firewall software and customised software development for message handling. The MES has higher capacity than the existing ICES servers in each location.

Scrutiny by Audit indicated that installation of MES for handling messages alone was necessitated due to the following reasons: (a) As per the original plan the existing ICES server was to handle messages with external agencies besides processing regular customs documents. However, the servers procured were under configured. (b) The software developed by NIC for handling of message with external agencies and implemented at Delhi pilot project did not provide quality EDI services. As a result, the department had to incur an additional expenditure of Rs.37.72 lakh in two locations for exchange of messages. This will entail further avoidable expenditure of Rs.3.96 crore in other twenty more locations.

The Department stated (October 2001) that the large number of number of transactions with banks/custodians/service center required installation of MES and therefore amount spent on it was not avoidable. It was further stated (January 2002) that the message exchange with outside agencies was not planned on ICES servers. The reply is not tenable as the installation of MES with EDI software was on account of incorrect selection of ICES server and failure to execute MOU with NIC before commencement of the project to enforce obligations since NIC was paid one-time software development charges including EDI software. As EDI connectivity was central to the ICES, the contention that message exchange with outside agencies was not planned earlier is also not tenable.

(d) Annual maintenance contract

(i) In June 1996, the Custom House, Delhi awarded annual maintenance contract (AMC) for equipments such as Air conditioning set, UPS, Diesel generator sets at a cost of Rs.12 lakh for each year during 1996-97 and 1997-98 to M/s. Group 4 Securities (Systems) Private Limited without calling for open tenders. In December 2000, the Department conveyed expost-facto sanction for Annual maintenance charges to be paid to M/s Group 4 Security (Systems) Private Limited for the period from July1998 to December 2000 (two years and six months) at Rs.6.60 lakh per annum based on the annual maintenance charges decided for the year 2000-01 with reference to the open tenders in which 14 firms participated. Thus payment of annual maintenance charges for two years 1996-97 and 1997-98 at Rs.12 lakh per annum

* Installation of a PC is for network address identification to the external users without giving the network address of internal ICES servers which does the regular processing

without calling for open tenders resulted in avoidable extra expenditure of Rs.10.80 lakh.

(ii) Similarly, the Department had awarded the AMC to M/s. HCL Infosystem for maintaining Computer hardware/software at IGI Airport, New Delhi till February 1999 on the expiry of the warranty period in November 1995/February 1996 without calling tenders for the AMC. The Department awarded two AMCs to M/s HCL Infosystem at Rs.19.10 lakh and Rs.20.25 lakh for the two systems (Export/import) available at the same place instead of a single comprehensive contract for both the systems for the period from March 1996 to February 1997. However, with effect from March 1997 a single AMC was awarded at Rs.20.60 lakh to the same contractor for both the Systems which was only 50 per cent of the cost for earlier years. The Annual maintenance charges paid to M/s.HCL Infosystem for the period December 1995 to February 1999 (Three years and three months) amounted to Rs.87.63 lakh. Finally, the Department invited tenders in March 2000 for the AMC and finalised the contract at Rs.14.50 lakh per annum for the period from March 1999 to February 2001 (Two years). Normally the maintenance charges would be lower in the initial period after the installation and higher as it becomes old. In this case the actual annual maintenance charges paid for the initial period was higher and substantially lower in the later period. Thus failure to execute a single contract for the two systems in the initial period and non-invitation of tenders resulted in avoidable expenditure of Rs.42.31 lakh till February 1999.

While admitting the audit observation, the Department stated (October 2001) that providing maintenance service at a short notice and the need to have continuity with single agency were some of the reasons for the non-invitation of tenders.

(e) Cost of collection paid to banks under ICES not rational

The department is making a payment to the collecting bank at the rate of 11.8 paise for every one thousand rupees of duty/cess collected. Audit scrutiny revealed that rate was not related to cost of collection under ICES and had not taken into account (i) work involved for the maintenance of accounting records (ii) provision of infrastructure like accommodation, hardware and other peripherals and development of software for the collection of the revenue for the collecting bank by the department and (iii) single point collection as against the earlier multipoint collection for departmental collection.

A rough estimation at Chennai indicated that as against the 0.12 per cent collection charges being paid to the Bank the departmental collection cost was less than .01 per cent or one tenth. There is therefore definite scope to negotiate and reduce the rate. Even a 50 per cent reduction could save the Government Rs.10 crore per annum.

The Department intimated (January 2002) that a Committee had since been set up to review the existing rates.

2.10 Security issues

The customs organisation collects around Rs.50,000 crore as revenue and disburses Rs.4000 crore as drawback payment annually. Manipulation of critical parameters such as classification, rate of duty, value, etc have crucial bearing on revenue. Therefore, security of the system with restriction on access is of utmost importance. The ICES has two types of users viz. (a) System Manager and (b) other users, each with a defined role. Further, the ICES also provides use of the system by outside agencies for data entry operations (service centres managed by M/s.CMC Limited) and connectivity to Container Freight station situated outside custom premises. This enhances the security risk necessitating additional safeguards.

(a) No security policy

The department is yet to formulate a security policy identifying threat perceptions and safety measures. The following features of ICES enhance security risks: (i) connectivity to the ICES database from outside area where Computer terminals are accommodated in private/Government buildings through dial-up technology using Public Switched Telephone Network for use by warehouses/container freight stations situated away from custom houses, (ii) establishment of service centers for data entry operation as well as transferring semi-processed documents for carrying out amendments by outside agencies. This risk is enhanced in the context of strategic sale of M/s. CMC Limited, (iii) direct connectivity to the main server by service center operator in the absence of separate hardware for service center operations in some locations and (iv) introduction of EDI connectivity through gateway and MES. However, DOS is yet to initiate action either on the proposal received from NIC in February 1999 or on the draft security policy formulated by the Additional Commissioner, Chennai based on the experience gained at Air Cargo, Chennai after the introduction of the software 'Autosecure' in December 1999.

(b) System Manager log file not maintained

The administration of the information system rests with the System Manager, who possesses root privilege, a special privilege by which he gets unlimited access to different parts of the information system. System administration includes (i) updation of the intermediary changes in the rates of duty, duty drawback and exchange rates with reference to notifications and (ii) other general functions like creation of users, etc. Besides the System Manager, root privilege is also given to NIC and M/s.CMC Limited, hardware maintenance agency. It is necessary to record the operations carried out in the system by the System Manager and the other root privilege users to trace and determine responsibility for changes made in the system which may also include processed customs documents.

A review made by Audit indicated that, in June 1999, the DOS had procured a software called 'Auto Secure' to create a log file wherein all activities carried out in the System by the root privilege user would be recorded and the log file would not be allowed for any modification. This software was introduced (September 1999) in ICES at Air

Cargo Chennai on an experimental basis. However, no action has been initiated for its implementation under ICES on regular basis either at Air cargo, Chennai or any of the other locations. Consequently, even though six years have elapsed since implementation of ICES, the operations carried out by the root privilege users are not being recorded. The DOS stated (March 2001) that 'Autosecure' software would be evaluated at ICD, Tughlakabad before rolling it out to other ICES sites.

Scrutiny of records revealed that two incidents occurred (July/August 1998) at Air Cargo, Delhi where an unauthorized user had logged into the System through the operating system and deleted certain files. Consequently, the System hanged completely. In the absence of the log file, the department could not identify the persons who misused the system.

While conceding to the absence of log file (audit trail) for the processed documents, DOS stated February/May 2001 that all escape keys had been trapped and no user would have access to the operating system. This did not address the issue of misuse of the operating commands by the persons having this privilege.

(c) Non utilisation of WORM

The department spent Rs.53.90 lakh for making available a facility called WORM (write once read many) optical disk drive in the servers of the ICES extension project as an additional item for recording essential transaction on security considerations. However, this facility is yet to be made use of by the department resulting in incurring infructuous expenditure of Rs.53.90 lakh.

(d) Poor access controls

The other users of ICES with defined roles in the system are following simple authentication procedure based on password mechanism. Ideally the password mechanism should provide for (i) changing the password by the users on their own before the expiration of a specified period. If not followed, the system should not allow the user to perform his/her role, (ii) usage of the password by the users in a specified terminal only and (iii) automatic disconnect option if the user is not making use of the system continuously for a specified period of time. Audit scrutiny revealed that no such access controls has been stipulated. The Department stated (October 2001) that the automatic disconnect option has been implemented now.

(e) Security failure-Fraudulent drawback payments

Commissioner, Air Cargo, Delhi, reported (December 1998) fraudulent payment of drawback under ICES. As per the report, a service centre operator entered data unauthorisedly and transferred it to the main server for further processing. The Commissioner reported that the Service Centre Operator misused the passwords of an Inspector and Superintendent and substituted their action for clearance of documents without any physical export of goods. It was further stated that substitution of action

had taken place from a terminal other than the one specified for those officers. The estimated loss on this account amounted to Rs.1.95 crore.

Audit scrutiny further revealed that the fraudulent payments were possible because of the following system lacunae:

a) Even though the manual of Handbook for Customs officers lays down that Customs officers were to change passwords at regular intervals, there was no in-built check by way of designing a programme in the operating system for change of passwords. Further, the operating system also did not restrict the usage of the password by the users from a specified terminal only.

b) Absence of a cross verification of the EGM data entered in the System by the service center operator with the original documents submitted along with the EGM print out received by the Export Wing of the Customs Department resulted in non-detection of fraudulent case immediately.

c) ICES provides for movement of the document electronically after data entry to the examination yard where the system allots the documents to different officers. Selection of particular document by an officer should therefore be difficult to achieve. As the selection of a particular document was done by the intruder, the system is unreliable.

Thus, the department lost Rs.1.95 crore on the fraudulent payment of drawback due to deficiencies in system security.

The Department stated (January 2002) that instructions had since been issued to system managers to make password change mandatory and suitable measures would be taken to enforce controls to minimise risk in future.

2.11 System lapses

(a) Non-updation of rates in the System

The DOS had issued (August 1999) instructions that the updation of rates of duty/drawback for each year would be undertaken centrally and all the field formations were advised to compare the directories with notified rates and carry out amendments, if any, for inaccuracies. The subsequent updation with reference to any new notification/rates is the responsibility of the System Manager of the concerned Customs House.

Audit noticed cases of incorrect feeding of drawback rates/duty rates in the System at Air Cargo, Chennai and Sea Customs, Chennai resulting in excess payment of drawback and short collection of import duty amounting to Rs.23.39 lakh and Rs.1.04 lakh respectively. ACC, Chennai replied (March 2001) that demand notices were issued for an amount of Rs.20.22 lakh and of this, an amount of Rs.19.32 lakh had been recovered. Similar lapses would have occurred in other Custom Houses.

(b) Absence of validation controls

(i) Incorrect data entry was noticed in Chennai Air cargo and JNPT, Nhava Sheva in 110 cases of export documents as the exporter had either not furnished the drawback units (i.e. quantity details left blank) or furnished incorrect drawback accounting units (i.e. unit measurement in terms of pieces/square foot instead of weight/square metre). The incorrect data entry could have been avoided at the data entry stage itself if the system performed the following validations: (i) Detect the omission to furnish drawback units and (ii) cross verify the drawback accounting units furnished with the type of drawback accounting units available in the drawback directory maintained in the system. As a result, there was excess payment of drawback (Drawback serial number 55.01/57.01) amounting to Rs.3.85 lakh in 39 cases where details were available. In the remaining cases where details not available, assuming a similar trend with reference to the cases quantified, the excess payment of drawback (Drawback serial number 57.01) could have amounted to Rs.16.60 lakh.

(ii) In 31 export documents at Chennai Sea Customs, it was noticed that the entire drawback as claimed under EPCG/general drawback was sanctioned even though the classification code indicated that the items were exported under Duty Entitlement and Exemption Certificate Scheme (DEEC). Thus, absence of validation controls to check inconsistent declaration resulted in excess payment of drawback amounting to Rs.14.25 lakh.

The Department stated (October 2001) that it is the responsibility of the exporter/customs officers to ensure the correctness the data entered in the System. It was further stated (January 2002) that efforts were being made to improve the software wherever possible. Reply is not acceptable as the very purpose of computerisation is to minimise the manual dependence on checking the correctness/computation of data and introduction of validation control is essential.

(c) Deficiency in software

(i) The exports under DEEC scheme is classified in the ICES in two categories viz. one involving payment of drawback the rest. The fact of export under DEEC scheme involving payment of drawback is identified in the System by three different simultaneous classification of alphanumeric code viz. 'E', '2A' and '5B' to facilitate restriction of the drawback to be allocated to the Central Excise as indicated in the drawback schedule.

Scrutiny by Audit, however, revealed that the System has been designed to calculate the full drawback including that allocable to Customs. As the ICES provides a facility to effect change in the quantum of drawback payable at the time of sanction of drawback, the Customs portion was being withheld manually thereby making payment of drawback for the Central Excise portion alone. A review made by Audit on the export made under DEEC scheme involving payment of drawback at Chennai Sea Customs revealed that the Custom House failed to restrict the drawback amount manually that should be allocated only to Central Excise resulting in excess payment of drawback of Rs.5.29 lakh in 23 cases for the period from January 1999 to December

2000. Similar analysis made on the exports made under DEEC scheme not involving payment of drawback showed that the System granted incorrect drawback amounting to Rs.3.86 lakh in 13 cases during the same period due to absence of a unique code to identify this category of export. Thus dependence on the manual operation to be performed in the system resulted in a total excess payment of drawback amounting to Rs.9.15 lakh at Chennai Sea Customs alone.

(ii) Lesser amount of drawback is payable in respect of goods manufactured with in-bond facility and exported. The export under in-bond facility is covered by four different classifications in the drawback Schedule. However, the software designed under ICES did not provide any facility to capture such information even though exporters furnish Appendix III along with the export document which contains clause 9 disclosing this information. This resulted in acceptance of incorrect classification declared by exporters. As a result, Air Cargo, Chennai had made excess payment of drawback amounting to Rs.0.47 lakh in one of the four different classifications. On being pointed out (December 2000), demand notice for recovery of excess drawback of Rs.47059 was issued in February 2001 and details in respect of similar three cases relating to the same exporter have been called for to recover the excess drawback.

(iii) According to the Manual of Handbook for Customs Officers, the System assigns Shipping Bill numbers automatically for the bills filed by the exporters under ICES. A scrutiny by audit of the numbers assigned revealed that the System assigned 476478 numbers at JNPT, Nhava Sheva during the period from December 1997 to April 2001, while the bills available in the database was only 194482 numbers indicating that there is deficiency in the software in assigning the numbers automatically. However, no reasons could be found in the database for such huge variations in assigning numbers.

In response, the Department stated (October 2001) that, though the System was designed to provide greater flexibility, it was the duty of the customs officers to check the details furnished by the exporters. Reply is not tenable as the concept of computerisation is to reduce the manual operations.

(d) Failure to evolve cess classification code in the System

Cess is leviable on certain selected imported goods under various Acts as per Appendix II Central Excise Tariff. The importers are required to furnish cess serial number at the time of filing of Bill of Entry for the levy of cess by the ICES. Scrutiny by Audit data indicated that there was no column specifically to accept data relating to cess serial number in the System. Consequently, the System could not levy cess automatically resulting in loss of revenue amounting to Rs.23.62 lakh in two Commissionerates.

The Department replied (January 2002) that the issue had since been taken up with Ministries to realign cess schedule with Custom Tariff headings.

(e) Absence of IGM control

A review made by Audit on the pendency in uncleared cargo as well as import documents filed under ICES indicated that there is no monitoring mechanism under

ICES to (i) pursue the pending import documents filed, (ii) ascertain the non-filing of import documents though the System provides data for all IGMs filed and (iii) identify duplicate filing of import documents both manually and under ICES. As a result, in respect of 39 of 497 cases test checked in Audit at Chennai Sea Customs, duty amounting to Rs.4.54 crore out of Rs.34.74 crore remained uncollected for the import documents filed under ICES as on April 2001 for the goods pending clearance. Besides escapement of collection of interest of Rs.1.80 lakh was noticed due to non-identification of the duplicate filing of the import documents both under ICES and manually.

While conceding the non-development of software for the closure of IGM electronically, the Department stated (October 2001) the action for the pendency in realisation of duty and non-clearance of goods has to be initiated by the customs officers. However, the fact remains that there is no effective monitoring.

2.12 Conclusion

The implementation of the Indian Customs EDI System on such a large scale in terms of number of locations, volume of transaction and the diverse agencies involved is no doubt a challenging task. To realise full benefits from the project the department needs to expedite completion; accord greater priority by committing more human resources particularly at senior and middle management level; develop in house expertise through training and take adequate steps to ensure system security and data validation. Particular attention also needs to be accorded to ensure compatibility and concurrent development of IT infrastructure in the other agencies.