Technological Feasibility Study

Description	The organization's system development life cycle methodology should provide for an examination of the technological feasibility of each alternative for satisfying the business requirements established for the development of a proposed new or modified information system project.
Control Notes	A Working Group on computerisation was set up and its report was taken as the basis of the tendering document and identification of the software developer for AST, which was conceptualized and implemented as a regionally centralized application. It was envisaged that there would be a National Computer Centre at the apex linked through leased lines to the 36 Regional Computer Centres which would be further linked through leased lines to the Local Building Servers to which the assessing officers would be connected. The AIS (PAN Database) was to serve as the index key for all the ITD Applications including AST. Thus, for smooth implementation of this system, the existence of reliable communication links from RCC to the users was critical as was the stabilisation of the AIS module. However the technological feasibility of having such information architecture was not adequately carried out. The communication links between the NCC, RCC and LBSs, are still not available in some cases and are unreliable in others. Further, the AIS module which is the index key unresolved issue relating to identification and migration of PAN. Eight years after the introduction of AST only 2571 out of 4436 assessing officers all over India i.e. 57.96% are using this application.
Management Response	The report of the Working group formed the basis of computerization and at the time of conceptualization there was an inherent design constraint due to which a single central database could not be made. The technical feasibility of the hardware and communications solutions was evaluated by the Technical Evaluation Group as well as the report of the Technical Sub Committee approved by the Working Group. The rest of the networking is being done in Phase III and at present a standalone software called TMS is being used at non-networked stations. AST is dependent on the stabilization of the PAN database, therefore it could be started only in 2000 and 8 years have not passed since its introduction.

Assessment	Audit found that the Working Group report referred to by the management was based on various inputs which did not include feasibility reports. A feasibility study should have been carried out after the working group submitted its report in order to analyze the technical feasibility of the recommendations. The other two committees mentioned were mandated only with evaluation of limited hardware requirements and not the technological feasibility of the proposed solutions. The fact that AST is dependent on network connectivity and stabilization of PAN are reflections of the feasibility of the linked model not being studied. Absence of adequate communication links has been one of the factors due to which the implementation as well as use of AST has remained incomplete[2]. Further, the fact that assessees are entitled to file their returns at any place in India depending on their residential status makes the issue of correct jurisdiction an important one. This is the genesis of the problems of identification and migration of PANs. This was not foreseen and built into the application design or deliverability. Inadequate technical feasibility study of AST system has limited the usefulness of the system and also delayed its implementation.
Recommendations	1. Department should institute a process of conducting specific and detailed technological feasibility studies of the projects before taking them up. Such study should invariably form a part of the proposals. 2. Department may review the existing information architecture with reference to the communication links and AIS as an index key requirement of the ITD Applications to address the shortcomings.

[2]In some of the cities on the Wide Area Network (WAN) for the ITD Applications, new office buildings were hired/constructed after the completion of Phase II of networking in 2002. These buildings should also have been brought on the WAN but this was not done. Some buildings at the 60-networked stations do not have network connectivity. This is being provided in Phase III of computerization

The AST Software was developed and implemented in 1997 in Delhi. Out of 354 assessing officers in 2004-05, 89 assessing officers are still not using AST.

	Economic Feasibility Study
Description	The organization's system development life cycle methodology should provide, in each proposed information systems development, implementation and modification project, for an analysis of the costs and benefits associated with each alternative being considered for satisfying the established business requirements.
Control Notes	AST is a part of ITD applications, which have been implemented in three phases since 1993. An examination of the cost benefit analysis of the proposal[3] for Phase III revealed that the proposed outlay of Rs.251.56 crores was given with a broad break up of activities, software products etc. The associated benefits were not quantified and the economic justification was based on broad assumptions of rise in tax base and increase in service level to the assessee as also tax compliance. No measurable parameters for increase in service levels or tax compliance were put forth in the proposal. It was observed that as against the expected figure of the tax base of 5 crore asessees by 31-3-2005 the actual tax base at the end of financial year 2005 was only 2.71 crores (down from 2.92 crores as on 31.03.2004). Furthermore, it was noticed that the department did not have expenditure figures of the AST project separately and was therefore not in a position to provide details of the cost of the project.
Management Response	The AST module is being implemented in phases and the total cost of developing ITD applications of which AST is one module was only Rs.72 lakhs. There has been an increase in productivity and service levels as the time limit for processing has decreased and, as per the Kelkar committee report, all the processing of the backlog of returns was completed in four months without any extra man power. The number of cases processed on AST and the average disposal per assessing officer has increased, while cost of collection has decreased. Productivity per employee has increased and benchmark activities as per the cabinet note as also electronic delivery of tax payer services are on track.
Assessment	In the absence of measurable parameters for benefits from the system and details of the cost of the project, the economic feasibility of AST could not be assessed. Further, the envisaged benefits of AST system in terms of increased efficiency have apparently not accrued as the country wide pendency has increased[4] and the number of cases processed on the system were seen to have declined at two of the selected stations due to both problems of communication links and links with other modules[5].

[3]The sanctions for Phase I and Phase II of the computerization programme have been covered in the AR 12 of 2000

Assessment	Data entry work for processing of returns was through outsourced man power[6] and cost of collection in absolute terms as well as per assessee has increased.[7] Audit found that the method used for arriving at the figure of Rs.72 lakhs took into account only the amount paid to the software developer for the designing. The other costs relating to hardware, system software, application software, implementation, operations, infrastructure and maintenance thereof have not been included. The department has also not allocated costs to individual modules of ITD applications to arrive at a cost benefit analysis for each module.
Recommen-dation	3. The Income Tax department should carry out a cost benefit analysis of the AST application development and implementation. 4. Guidelines be laid down for assessing economic feasibility of such IT projects. The guidelines should include measurable parameters of benefits against which a subsequent evaluation of the project should be possible. 5. The department maintain the cost data separately for each module of the ITD Applications including AST.

[4] As per figures provided by DIT Systems the all-India pendency went up from 38.33 lakh (02-03) to 56.05 lakh (03-04) and 70.68 lakh (04-05); 17%, 25% and 30% respectively of the total returns filed

[5]Delhi:

The pendency of summary assessment has increased from 4.71% (2002-03) to 42.48 % (2004-05).

Despite increase in number of assessing officers using AST from 248 (2003-04) to 265 (2004-05), the average number of summary assessments completed using AST by assessing officers has declined from 3120.29 to 3081.90. The average number of summary assessments completed (both manually & using AST) has declined from 8479.35 (2002-03) to 3346.15 (2004-05) even though the number of assessing officers has increased from 312 to 354. The decline is by 60% (approx.).

The reasons for pendency were mainly problems associated with PAN (See Appendix A for PAN Problems in processing) and problems with the communication links established.

Himachal Pradesh:

During the year 2001-02 and 2002-03 when the returns were processed manually, there was no pendency at the close of the year but with the introduction of AST system w.e.f.13.08.2003 it was noticed that 4411 returns out of 12735 and 3853 out of 13457 returns were pending for processing at the close of the year 2003-04 and 2004-05 respectively. Pendency of returns at the close of the year was due to problems with the communication links established as well as issues relating to PAN.

[6]Please see section on Manage Third Party Services

[7] Please see footnote 4 and table 2.24 of Report no. 8 of 2006 (Direct Taxes) of the C&AG

Information Architecture

Description

Management should ensure that attention is paid to the enterprise data model while solutions are being identified and analyzed for feasibility.

Control Notes

AST is a regionally centralized application at 36 locations. The system, therefore, consists of 36 databases in as many locations running a single common application. The users are connected to their respective RCCs through leased lines.

The enterprise data model existing at the time of the current phase of IT initiative, of which AST is a major part, centered on the PAN database. The PAN database, whose objective is to uniquely identify every assessee in the country, was a centralized database. The centralized nature is a business requirement to achieve the integrity constraint of uniqueness. However, the system envisaged that credits would be available from OLTAS for advance tax and self-assessment tax and e-TDS for the tax deducted at source. These were to be credited against the demand worked out in the AST module using PAN as the linking key, and the refund/demand as worked out was to be updated in the IRLA system.

Due to problems in the implementation of OLTAS the credits for self assessment and advance tax are not correctly available from the system.[8] Credits from the TDS module named e-TDS can also not be linked to the AST module data as e-TDS is in the process of implementation.

The issue is further compounded by cases of non-allocation and non-migration of PAN.

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[8]AST Instruction No 16 details the procedure to correct the wrong data posted to IRLA from the erstwhile TAS System.

AST Instruction No. 34 details the list of the problems in the modified version called OLTAS which includes wrong information of challans posted from OLTAS to IRLA, non availability of information on paid challans in posted records in OLTAS, minor head mismatch in AST and OLTAS, challan lying in suspense in OLTAS, Challan Identification Number of challan entered in AST not available in OLTAS, PAN mismatch in AST and OLTAS and existence of non posted records from AST.

AST Instruction No 18 details the method of correction of wrong TDS entries made through AST and posted to IRLA.

Control Notes	The "Individual Running Ledger Account" (IRLA) maintains the details of all the transactions of assessees with the department. However, IRLA does not have the correct details of arrear demand. Manual uploading of the prior period data has also not been effective since assesses with arrear demands outstanding do not all have PANs and therefore cannot be linked with the IRLA data. The NCC has a link with all the 36 RCCs. However, the department has not created any national database of the information available in the 36 databases. In the absence of such a database the ability of the department to use AST at the national level for important MIS needs is limited.[9]
Management Response	The conceptual design of ITD Applications is an interlinked one with data from the AIS, TAS and TDS module. The modified OLTAS and e-TDS are in the process of stabilization; though the linkages exist and are functional, quoting of PAN is not accurate therefore automated credits are not being given and credits are routed through a verification routine by the assessing officer. The entire data model is of regionally centralized databases at RCCs. Only five out of 14 parameters of the PAN Database are stored at NCC which does not change its architecture into a centralized one. OLTAS data is available to the assessing officers who have been given a functionality to locate challans to avoid wrong posting of data to IRLA. OLTAS has deductor wise data for TDS which cannot be directly posted into AST therefore credit is given on the basis of TDS certificates enclosed with the return. MIS can be generated regionally since the architecture is regionally centralized. A single National Database is being set up in Phase III of the Comprehensive Computerization Programme by consolidation of 36 regional databases.

[9]Generating MIS information necessitates changing the forms of AST, making it as a patch and then getting RCCs to run the query and fax the reports to NCC. (AST Instruction No 25 dated 3.12.2003.)

Assessment	AST application has been developed without ensuring proper synchronization with the enterprise data model which has a centralized data base of PAN on one side and OLTAS and TDS on the other which at the time of data capture cannot validate the data against PAN. The conceptual plan document of AIS data base described the system as centralized for processing and decentralized in terms of data input and output. This disparate data model has led to serious issues. The heavy un-reconciled balances[10] in the OLTAS system mean that the bank validated input regarding the actual payment of the tax challan into the government accounts cannot be given to the assessing officer who is using the AST system for processing. The assessing officer therefore cannot verify through the AST system whether the tax claimed to be paid by the assessee has actually been paid. Tax deduction at source is also unverifiable through the AST system. Online information regarding the assessee's tax liability or refund due which was expected to be provided through the output from the AST system to the IRLA is not operational. The digitization of arrear demand also suffers from operational problems due to which prior period data in respect of arrear demand is unreliable. This entails a risk of loss of critical information relating to revenue due to the government. Generation of all India level MIS cannot be done due to the inadequate considerations to information architecture.[11] Use of AIS as the index key to ITD application systems led to problems in implementation as already pointed out in AR 12 of 2000 by the C&AG. Since the Income tax Department is highly decentralised in terms of operation, the AIS system design which was centralised was found to be weak in implementation, thereby affecting the functioning of AST[12].
Recommen-dation	6. It is recommended that the income tax department define an enterprise data model for its application resulting in adequate information architecture so that the IT efforts of the department are synergized. 7. Department may consider developing a national database of information in ITD applications to enable better and efficient MIS reporting and reconciliation of data from different applications. 8. Department may prepare a time bound action plan to link the arrear demand data to AST system to ensure that no revenue due to government is lost sight of.

[10] Rs.1526 crores are lying in suspense in OLTAS in Delhi

[11] Please see the section on the SQL Query and Appendix C and footnote

[12] Please Para 3.2.10 (b) of AR 12 of 2000