Chapter 6

E.D.P. Audit

INTERNAL CONTROLS IN EDP ENVIRONMENT

Types of I.C.

(A) Overall controls affecting EDP environment (General EDP controls).
(B) Specific controls over specific applications (EDP application controls)

General EDP Controls

(a) Organization and management controls- Designing policies and procedures relating to control functions. Segregation of incompatible functions.

(b) System software controls – Restricted access of software to authorized personnel only. Authorization, approval, testing and implementation of new systems software.

(c) Application system development and maintenance controls- Restricted access to system documentation Changes to application systems 'should be authorized. Acquisition of application systems from third parties should be carefully planned. Testing and implementation of new systems in a proper way.

(d) Computer operation controls- Use of only authorized programs on computers. Only authorized personnel should use computer. Systems should be used for authorized purpose. Processing errors are detected and corrected on a timely basis.

(e) Data entry and program controls- Restricted access to data and programs to authorized personnel only. Input should go through an authorization process.

EDP Application Controls

(a) Controls over input – to check whether:

- Input is duly authorized.
- Data input is accurate
- Transactions are not lost or altered.
- Incorrect transactions are rejected or submitted after correction.

(b) Controls over processing and computer data files- to check whether.

- Processing errors are detected and corrected on a timely basis.
- Transactions are properly processed by the computers.

(c) Controls over output- to check whether:

- Results of processing are accurate
- Access to output is restricted to authorized personnel.
- Output is provided to appropriate authorized personal on a timely basis.

INTERNAL CONTROLS IN SERVICVE BUREAU

If some applications of the client are carried out at a service bureau, there should be a proper internal control system. This is required mainly because data moves outside client entity. In such cases, following should be considered:

(a) There should be proper coordination between bureau and user.
(b) Proper testing of the system should be carried out.
(c) Proper file conversion checking procedures should be used by the user.
(d) There should be control over the physical movement of data.
(e) There should be control over the maintenance of master files.
(f) There should be control over output distribution to ensure that output is provided only to authorized personnel.
(g) There should be manual controls to verify the accuracy of computer processing.
(h) Appropriate rejection procedures should be adopted, in case data is found to be erroneous.

TYPES OF EDP ACCOUNT SYSTEMS

Batch processing systems

1. Transactions are accumulated and processed in groups
2. Controls totals (record count, financial total and hash totals) are devided to ensure complete and accurate processing.
3. 2 types of files are maintained: master file and batch file.
4. Updating doesn't take place as quickly as in on line real time systems.
5. This is simple system, but now a day, it is rarely found due to availability of advanced and quick systems.

On line real time (OLRT) System

1. Transactions are entered and processed at the same time when they occur.
2. There is continuous updating of databases.
3. However, this is more complex than batch processing.
4. Ordinarily, they don't provide audit trail.
5. Thus, auditing in such systems requires special consideration by auditor.
6. For example, airline reservations and ATM's

AUDIT TRIAL IN EDP ENVIRONMENT

Audit trail meaning

- Audit trail means tracing a transaction from starting to end and vice versa.
- It is a situation where it is possible to relate the original input with the final output on 'one-to-one' basis.

Audit trail in EDP

Audit trail is generally not available in EDP environment due to following factors:

(a) Direct data entry in to the system.
(b) Direct posting of transactions to master file.
(c) Elimination of reports because information is provided on-line.

How to compensate loss of audit trail

Auditor may use following to compensate the loss of audit trial:

(a) CAAT
(b) Programmed interrogation facilities.
(c) Arranging for special printouts containing additional information.

APPROACHES TO EDP AUDITING

Auditing around the computer (black box approach)

- The auditor determines his audit procedures without considering the fact of use of computers for processing of information.
- Thus, computer is used just as a tool of the auditor to help him in performing audit.
- It means that auditor carries out the audit more-or-less in the same manner as in manual system except that instead of hand-written books of account, he examines computer printouts.
- The auditor can use audit around the computer when-
  (i) the system is simple and batch oriented and audit trail is available, or
  (ii) the system uses generalized well-tested software.
- The primary advantage of this approach is simplicity.
- Moreover, auditors having little technical knowledge of computers can be trained easily to perform the audit.
- However, it is not suitable for complex systems.

Auditing through the computer (white box approach)

- First of all, the auditor reviews the internal controls relating to EDP and on the basis of this evaluation determines the nature, timing and extent of his substantive procedures.
- Thus, computer is used as the target of audit. Auditor examines processing reliability and accuracy of the computer program.
- The auditor can use the computer to test:-
  (a) The logic and controls existing within the system, and
  (b) The records produced by the system.
- It requires use of CAAT.

- It is required due to:

(1) Online data entry
(2) Real time file updating
(3) Reduction of printouts

- However:

(a) It may involve high costs.

There is need for extensive technical expertise.

COMPUTER ASSISTED AUDIT TECHNIQUES (CAAT) - TYPES

Audit software	▪ These are computer programs used by auditor to process data from the entity's accounting system. ▪ However, auditor should use such programs only after he proves their validity for audit purposes. ▪ Audit software may be of three types.
	Package programs ▪ These are generalized computer programs that perform data processing like selecting information and performing calculations etc. ▪ These may be used at many client's site.
	Purpose written programs ▪ These are computer programs to perform audit tasks in specific circumstances. ▪ It may not be used at many clients site, thus cost effectiveness should be considered.
	Utility programs ▪ These are programs for performing common data processing functions like sorting, creating and printing files. ▪ These are not designed specifically for audit purpose.

Test data	▪ The auditor enters a set of test data into the entity's computer system and compares the results with predetermined results. ▪ Test data are used to test specific characteristics in computer programs. ▪ The test data are chosen by the auditor.
	Test packs It involves testing a set of data, chosen by the auditor, in the entity's system, separately from the normal processing procedure.
	Integrated test facility Here, auditor establishes a dummy unit to which test transactions are posted during the normal processing cycle of the entity. However, later on, the dummy entries should be eliminated from the entity's accounting records. These are used mainly in case of On line real time systems.

COMPUTER ASSISTED AUDIT TECHNIQUES (CAAT)- ADVANTAGES

Time saving	The auditor can check voluminous data in less time by using CAAT.
Sampling	Generally, audit software has embedded sampling routines. Thus, it is easy for the auditor to choose appropriate sample as per stated criteria.
Detailed examination	Exhaustive examination of client's system is possible by using these advanced techniques.
Testing internal controls	Various internal controls embedded within the system can be checked with help of CAAT. Manual audit procedures are not effective for this.
Analytical review procedure	CAAT's are very effective in performing ARP because the software can easily trace unusual fluctuations and hard copy can be generated for auditor's ready reference.
Compensate for loss of audit trail	Due to loss of audit trail in mostly EDP systems, manual audit procedures become impractical, making use of CAAT indispensable.
For OLRT Systems	In case, client is using on line real time systems, there is need to check systems itself, this is possible through ITF.

AUDIT IN A COMPUTER INFORMTION SYSTEMS ENVIRONMENT – some points

Computer information systems (CIS) ▪ CIS environment is one where one or more computers are involved in the processing of accounts of client. ▪ These computers may be operated by the entity or by a third party	
Nature of risks and the internal control characteristics in CIS environments	**Lack of transactions trails** Some CIS may provide complete transaction trial, however some may not provide it (OLRT). If there is absence of trial, the risk will be high.
	Uniform processing of transactions Uniform processing of transaction can eliminate clerical errors which are there with manual processing. However, programming errors may occur.

	Lack of segregation of functions The extent of segregation of functions present in manual systems may not be there in CIS environment. Thus, an individual performing many computer related works may be in a position to perform incompatible function.
	Errors and irregularities in development, maintenance and execution of CIS The potential for human error in development, maintenance and execution of CIS may be greater than in manual system (due to technical incompetence).
	Automatic initiation or execution of transaction CIS may initiate certain transactions automatically. The authorization of these transactions may not be documented (for Eg. – ERP)
	Dependence of other controls over computer processing Manual control procedure may also be used while implementing CIS.
	Potential for increased management supervision If management uses all the technologies & tools to review & supervise the CIS department of entity, the risk will be reduced.
	Potential for use of CAAT Due to peculiarities of some transaction and systems, auditor may be required to apply CAAT.

Evaluating the reliability of CIS

These systems should:

- Provide authorized, correct and complete data to processing centre.
- Provide for detection of errors on timely basis.
- Have data recovery arrangement so that in case of interruption due to power, mechanical or processing failures, the system restarts without loss of entries or records.
- Ensure that output is correct and complete.
- Ensure that there is adequate data security against fire and other calamities, wrong processing and fraud, etc.
- Ensure that amendments to the programs are properly authorized.
- Ensure safe custody of the application software and the data files.