How do auditors use computers in performing audits?

The following areas have been suggested as suitable applications of PC's to audit work:

(a) **Spreadsheets**

Spreadsheets are 'sheets', similar to analysis paper, divided into individually referenced 'cells' that can be programmed with formulae in order to calculate and recalculate quickly and accurately. They hold much more data than can be comfortably held on analysis paper.

Spreadsheets can be used in the following areas:

(i) **Accounts preparation**

Good quality inexpensive, standardised accounts preparation packages are now available and are suitable for anything from the smallest of entities, to large consolidation packages. Many of these are spreadsheet based.

(ii) **Time/cost budgeting**

The firm's staffing requirements and planning can be performed using spreadsheets and individual audits can be costed and budgeted using integrated software.
(iii) Analytical procedures

Analytical procedures that involve the calculation of trends, ratios and other relationships can be dealt with effectively using spreadsheets. Data in relation to financial performance and position can be held for comparison with subsequent years, and the use of spreadsheets facilitates consistency, particularly where there are changes of staff.

(b) Statistical packages

This type of package is particularly useful in the application of sampling procedures. Packages can, for example:

(i) select the number of items to test, within given parameters of risk and assurance required;

(ii) select which items to test, at random, on a systematic, block or monetary basis;

(iii) analyse results, by means of extrapolation to the population as a whole.

Such packages increase the efficiency of the audit as they promote accuracy and speed, and facilitate delegation and review. The danger is that the package will be used mechanically, without the proper use of professional judgement and that the results will be assumed to be correct, simply because they have been produced by the computer.
If the auditor’s PCs can be connected to the client’s PCs, or are compatible with them, there will be no need to input data relating to populations from which samples are drawn, as they can be taken directly from the client’s system. This may represent a considerable time and cost saving.

(c) Word processing

Word processing is used in almost all areas of the audit. It is used for the routine production of reports, faxes, letters, memos, emails and other communications.

It reduces the need for support staff and shortens the time in which documents can be produced, as the packages are user-friendly and can be used by professional staff. It also improves client and staff relations, particularly where email can be used to eliminate the physical movement of large documents that need to be reviewed or edited.

Specifically, it can be used to produce audit programs, audit planning documentation, ordinary working papers, lead schedules, and almost all other current file documentation.

Providing there is adequate backup and proper contingency planning, it may be possible to reduce the number of paper based files kept, with a consequent reduction in storage costs.
Use of CAATS (Computer Assisted Audit Techniques) in Auditing

CAATs are now available as standardised packages, but are generally still only used for larger clients as they are relatively expensive. They are, however, cost effective in the long run as they are quicker and more accurate than conventional techniques. The effective use of CAATs relies on the co-operation of clients and a proper understanding of their use.

There are two basic categories of CAAT:

(i) Audit Software

N.B. Audit software is primarily used for substantive procedures. Client data is processed though the auditor's programs. These programs can, for example:

1 check additions (recalculate);

2 select high value, static, or negative transactions and balances, for review;
3 perform, or re-perform the ageing of a ledger;

4 select samples for further testing.

The data can be downloaded directly from the client’s system, or re-input into the auditor’s system. Obviously, the better the communications between auditor and client systems, the more efficient this process will be.

‘Embedded audit facilities’ amount to audit software that has been written into the client’s system, to trap items as they are processed for further testing at a later date.

Be careful with questions which ask for a discussion on the software which can be used during the course of an audit, remember the easy ones first.

WORD: The Bank confirmation letter will be copied from last year with date changes. The Receivables Circularisation letters will be prepared as a mail merge using a standard letter on file.

EXCEL: Analytical review can be conducted in excel.

Sampling: Excel can be used to generate random numbers and also in the use of Monetary Unit Sampling (MUS).
(ii) Test data

Test data is auditor generated data (very reliable) that is used primarily for testing controls.

The auditor will test access controls over the system by attempting to gain unauthorised entry into it, or by attempting to process invalid data. For example, unauthorised passwords, employee names or numbers may be used in an attempt to gain entry. Incomplete transactions, transactions with incorrect coding, transactions outside programmed parameters, and transactions with non-existent customers or suppliers - all of these may be used in testing to ensure that the system properly rejects invalid transactions.

Test data carries with it the inherent risk of corruption of client data.

'Integrated test facilities' (a virtual "sandpit"), which give the auditor his/her own section of the general ledger avoid this, and permit the testing of longer-term controls.

Audit Practice considerations in Using CAATs

- The costs of investing in PCs, the associated software, refurbishment, training and maintenance must be balanced against the benefits of a more streamlined and efficient audit practice.
- Client's files must not be corrupted or damaged.
- Files used for testing must be complete, accurate and identical to, if not the same as, files currently used by the client. (i.e. a representative sample)
- Computer audit programs must be amended to account for developments in the client's applications.
- The audit costs in general may increase because experienced and specially trained staff will be required to design the software, perform the testing and review the results of the testing.
Auditing Around the Computer

“Auditing Around the Computer” = This term means that audit activity is focused primarily on ensuring that the source documentation is processed correctly and the auditor verifies this by checking the source documentation to the output documentation. The “internal” software of the computer is not documented or audited by the auditor.

This method of auditing increases audit risk because, the actual computer files and programs are not tested; the auditor has no auditor generated evidence that the programs are working as documented.

Where errors are found in reconciling inputs to outputs, it may be difficult or even impossible to determine why those errors occurred. Useful amendments to clients systems (Communication of Audit to Those Charged With Governance ISA 260) cannot be made and there is an increased possibility of audit report modifications.
CAATs (Audit Software) – Sample Question and Answer

You are an audit senior with an interest in computer auditing and you are employed in a firm of Accountants. You have just been assigned to assist in the audit of a new client of your firm, TECHNO Ltd. ("TECHNO"), a software development company, whose parent company is an internationally known company based in Frankfurt.

The main expense of the company is Wages and Salaries. TECHNO employs in excess of 5,000 staff, a small percentage of whom are employed in administrative and management functions. The company operates a highly computerised recording and accounting system. For the past 10 years the company has operated a computer-based accounting system developed in-house. It is currently in the process of developing a new system, the implementation of which is planned for the month following the audit.

The audit manager is concerned about the efficiency and effectiveness of the audit, especially given the large number of employees on a weekly salary and the extent of computerisation of the client’s processes. Also, there is a shortage of audit assistants to carry out the detailed tests at the time the audit is to be carried out. The deadline for completion of the audit fieldwork is fixed so that TECHNO’s results can be included in the financial statements of the German parent.

The audit manager has read that Computer Assisted Audit Techniques (CAATs) would afford opportunities to assist in the performance of the audit work. However, he is relying on you as neither he nor any other manager within the firm has had any practical experience of using CAATs. There is a budget available for the purchase of whatever additional computer equipment or programs you require. He has asked you to brief him on the audit and on the potential use of CAATs.

Requirement:

Respond to the audit manager by drafting a file note to include, in particular, each of the following:

(a) Assuming that CAATs can be used, your advice (together with reasoning) as to the choice of a systems based approach or a wholly substantive audit approach to Wages and Salaries.
(b) EIGHT specific examples, in bullet point format, of how CAATs could be used to obtain audit evidence on TECHNO's Wages and Salaries figure.

(c) An outline of the main steps in designing and running CAATs on TECHNO's Wages and Salaries figure.

SUGGESTED SOLUTION

(a) In the circumstances of "TECHNO " as described in the background information, a wholly substantive audit approach is considered more appropriate. A systems based audit approach would be inappropriate to test the operation of the enterprise 's computer systems for the following reasons:

i. The relatively high degree of development time involved in setting up such tests.

ii. Testing the internal control system for one year only as the company is in the process of developing a new system, the implementation of which is planned for the month following the audit.

CAATs can be used as part of the substantive audit work and can give extensive audit coverage, rather than a small sample (for systems testing purposes) dealing with a large volume of transactions. The use of test data is ruled out in these circumstances because of the risk that test data will corrupt company files unless appropriate corrective action is taken. This would be considered high risk in these circumstances because of the low level of expertise existing within the audit firm. The background information indicates that neither the audit manager nor any other senior party within the firm has any practical experience of the use of CAATs.
It is suggested that CAATs could be used to obtain audit evidence on TECHNO’s wages and salaries figure as follows:

**Use of exception reports to check:**

- Changes to standing data
- Salaries >€ X
- Duplicate employees (sequence checking)
- Duplicate PPS numbers
- Employees without PPS number

**Detecting unreasonable items, for example hours worked < 20 or > 60 per week.**

**Analysis and pattern detection:**

- Detecting violations of systems rules by aging, sorting, summarising.
- Compare average salary for different departments.
- Compare overtime payments between different teams.

**Enable the performing of statistical analyses such as generating frequency distributions, calculating the mean and standard deviation.**

**Verify control totals**

- Check PAYE, PRSI calculations.
- Recalculate overtime/bonus payments.
- Check the value of items on a file to ensure they agree with control totals.
Validate date

- Check that all employees have a valid joining date.

Selection of items for audit testing

- Joiners and leavers.
- Sample selection/stratification.

Completeness checks

- Are all employee or department numbers included in all weeks of the year.

Amendments to standing data

(c) In designing and running CAATs on TECHNO’s wages and salaries figure, the standard principle of Planning, Controlling and Recording apply. The following main steps are suggested:

- Decide on the specific audit objectives.
- Determine the content and accessibility of client’s computer files (or client systems).
- Decide on what procedures are to be performed on the data.
- Define the output requirements.
- Identify the audit and client personnel who need to be involved and that their level of skill/expertise within the firm is appropriate.
- Execute CAAT.
- Evaluate the results.
- Document each step as it occurs and this documentation should allow performance of the CAAT if required.
- Define audit software to be used.
There are special considerations for auditors when a system is computerised. IT controls comprise general and application controls.

**General Controls: "ASDA ROME"**

Relate to the entire Information System

* A: **Anti Virus Software**: minimise the risk of loss or corruption of data

* **SD**: System Development Controls: Use of proper programming standards, qualified programmers, testing and conversion procedures

* **A**: Access Controls : Passwords, Locked Computer Rooms, Swipecards

**ROM**: Read Only Memory

**E**: Encryption: Help prevent hacking
Application Controls:

Application controls are manual or automated procedures that typically operate at a business process level. They can be preventative or detective in nature and are designed to ensure the integrity of the accounting records. Accordingly, they relate to procedures used to initiate, record, process and report transactions.

A: Authorisation Controls – Both manual & computerised to prevent the recording of invalid and inaccurate transactions

B: Batch totals

S: Screen Prompts – “Quit Yes/No” – Help prevent many types of input error

S: Sequence Checks - Ensure the completeness of input

P: Parameter (or Reasonableness) checks – is the figure for a transaction within an acceptable range e.g. customer credit limit

E: Existence Checks - ensures that the customer, supplier or employee who is being entered on a transaction file, actually exists on the master file

C: Consistency Checks - ensure that one part of the transaction being entered is consistent with another e.g. if there is a charge for carriage inwards, there should also be a charge for purchases

Memory Aid: “Abs Spec”

Monitoring Controls

These controls are typically detective in nature and are regarded as “after the event” controls. They involve reviewing information to provide assurance as to the reliability of the financial reporting being generated from the Accounting system. Examples include reviewing a report or reconciliation; examining an exceptions report
**Maintaining Master Files**

Master files are of particular significance as any inaccuracy in these will result error(s) which will be repeated. Important controls would include:

- A rigorous system in place to ensure that Master files can be reconstructed in the event of a system crash
- Copies of all master files to be held in a secure location outside the computer room
- Master files to be updated by persons not connected with the execution or processing of transactions
- Careful validation of input data to the master file to prevent corruption
- One to one checking of all input data