

APPROACHES TO COMPUTER AUDITING

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Abstract

The world has advanced scientifically and technologically in reasoning and in doing things. The recent development in science and technology especially in the area of mechanization of operations have posed a great challenge to Auditors. These challenges must not be ignored because Auditors must have to form opinion in the financial statement presented before them. Auditors must learn how to audit through the computer and or around the computer in order for them to continue to be professionally relevant in this modern society. Auditing through the computer requires complete mastery of the workings of the computer. It is the recommended type because the Auditor has to master the workings of the computer. Auditing around the computer is obsolete and no longer fashionable because the Auditor has to rely on the integrity of the computer operator and internal control in operation.

Introduction

The world has gone advanced scientifically and technologically in reasoning and in doing things. The recent development in science and technology especially in the area of mechanization of operations are rapidly affecting the work-load of auditors. Computers of various types have been introduced to substantially enhance human efforts in industrial, official and domestic activities. Accounting, generally known as the language of business, has been invaded and annexed by the revolution in computer technology. Thus the manual bookkeeping and accounting methods are gradually phasing out, paving ways to computerization in both private and public sections of the economy. The superiority of computers as a new technological innovation was as a result of the concomitant benefits of using them. Data are captured, stored, processed, analyzed, transmitted and reported with computers. Computers therefore are becoming the standard of communication among organizations.

Although computers are very attractive and their benefits very fascinating that does not imply that computer is impeccable in doing things. Errors, omissions, systems

malfunctions, faulty computer application, improper operations procedures and personnel administration lack of technical expertise intentional falsification of data to computer fraud are common in electronic data processing environment (EDP). Audit and security practitioners and management at large have suffered embarrassment and untold losses. Cognizance must have to be taken of the fact that computer processes data on the basis of given instructions. So garbage in garbage out (Mckeown, 1976).

Although the disadvantages of computerization are many (and the advantages innumerable) there is the need for organization to forge ahead in business in a more controlled and reliable environment. Understanding the Electronic Data Processing (EDP) audit and security is the only solution and these poses some challenges and create some opportunities for Auditors. One of the challenges is understanding the technology and how it will impact the audit processes. This may require additional education and training on the part of the auditors. On the other hand, the application systems may also offer significant opportunities for Auditors. The presence of computerized accounting systems, for instance, may enable public accounting firms to make the conduct of such parts of the audit less mundane, more interesting to their audit staff and perhaps more efficient. Many auditing firms now provide their Staff Auditors with Micro Computers and audit software, which facilitate tasks such as trial balance and working paper preparation. Ukwuegbu (1994) observed that the Auditors today will find computer technology not only relevant but 1 almost indispensable if he is to catch up with modern trends in the profession. In support of the above statement, Ojaide (1996), stated that Auditors must be prepared to develop and acquire the necessary skills for the handling of computerized audit assignments because mere reliance on the statements of computer specialist cannot absolve them of liabilities. Computer literacy is therefore a necessary and a sufficient condition for efficient and effective performance of any Auditor in this modern world.

The Concept of Computer Auditing

Computer auditing can be described as simply auditing in a computerized environment with reference to the programmed controls carried out by computer applications and the manual controls exercised by the users (Ukwuegbu, 1994). There are two levels of controls in computer auditing.

1. Programme Controls.

Nwankwo (1995), defined a program as set of instructions prepared by individuals (Computer programmers), to direct the computer to function in a t specific way so as to produce a desired result. Computer programme is also called software. It is the intelligence in a computer. Programme controls are built into the application programmes such as payroll programmes of edit, update, etc, which monitors the processing activities of the system and ensures that data integrity is maintained.

2. Manual or Administrative Controls.

These controls are concerned with the environment in which the computer application are developed, maintained and operated. These controls are instituted during the development state which defines the method of activities within the computer environment to ensure that information is only available to the authorized users only. The EOP department of an organization has the following personnel for effective running of the department and the administrative controls handled by them. Some of the personnel are System Analysts, Programmers, Computer Operators and Librarians. Fasua (2001) observed that administrative controls also include controls over Computer operators, segregation of duties, accounting records controls and hardware control.

Computer auditing also involves the monitoring of these controls and the expression of opinions on how the activities functions.

Computer serves as an aid to the auditors. The Auditors can audit through or around the computer before he expresses his opinion as to the correctness and effectiveness of the results of operations, substantive testing of computer records is possible and necessary. However, its extent depends on the degree of reliance the auditor has placed on the internal control. Millichamp (1998) opined that the degree of that reliance will depend on the results of his review and compliance testing of the internal controls over the accounting records.

Auditors can take one of three approaches to utilize the computer as a compliance auditing tool.

- i. Use the Computer to select transactions and manually audit the actual transaction processing.
- ii. Audit the processing programme controls with simulated data; and

- iii. Audit the programmed controls with live data reprocessed with an audit program (Robertson and Davis, 1988).

Planning the audit in a computer environment

Computer system affects three areas of an audit.

- i. the planning
- ii. the proper study and evaluation of internal control
- iii. the gathering of evidence on details of transactions and account balances. In planning the engagement, the auditor must consider how EDP is used by the entity to process accounting information. This must include the following factors;
- iv. the extent to which the computer is used in each significant accounting application;
- v. the capacity of the entity's computer operations;
- vi. the organization structure of the computer processing activities;
- vii. the availability of data for evidential matter.

The Auditor may spend more time in understanding the internal control capital in operation in an entity in order to conduct test of controls and substantive test. But this is dependent upon the complex nature of the entity's computer application. In this situation a computer specialist may need to be part of the audit team in order to evaluate internal control properly and to plan audit test. Robertson and Davis (1988) maintained that when automation of transactions becomes more ~ complex, auditing firms need to employ audit specialist who understand t. computer technology and who are aware of basic audit purposes.

Although the term computer auditing has a certain mystique, there is no fundamental difference between computer auditing and manual auditing. Audit objectives do not change when accounting information is processed by a computer what may change, however, are the methods of applying specific audit procedures. While the auditor may continue to use manual procedures for some test, in computerized accounting systems it may be necessary to use Computer Assisted Audit Techniques (CAATs) to obtain audit evidence. CAATs are generally used to assists the Auditor in testing application controls.

The Auditor may need to use CAATs to execute substantive tests when the information is maintained in machine readable form.

Auditing approaches in a Computerized Environment

The Auditor has the following two methods at his disposal namely, auditing around the computer and auditing through the computer.

Auditing around the Computer

When the Auditor uses only the non - EDP segment of the internal control structures to assess control risk, it is commonly referred to as auditing around the computer. Millichamp (1998) stated that Auditing around the computer means treating the computer as a 'Black box', the auditor looks at input and output but ignores what goes on in between. Arens and Leobbecke (1988) also stated that in Auditing around the computer that the Auditors were attempting to isolate the computer - to treat it like a 'black box' - and to find out assurance by vouching and tracing data from output to source documents and from source documents to output. In this approach, the Auditor must have an understanding of the internal control structure. He shall perform tests of transactions, and account balance verification procedures in the same manner as in non - EDP system. Since the Auditor in this approach concentrates on reconciling the input and the output without directly verifying the processing of the data, he is relying on the controls in the user departments rather than on the application controls included in the complex programmes. He depends solely on the computer operator for the supply of all the required information. Evidence regarding the completeness, accuracy and validity of processing is obtained by a reconciliation of computer output with input and ensuring that controls of input and output are working accordingly.

To audit around the computer, the auditor must have access to sufficient source documents and a detailed listing of output in a readable form. This is possible when all the following conditions are met.

1. The source documents are available in a non - machine language;
2. The documents are filed in a manner that makes it possible to locate them for auditing purposes;
3. The output is listed in sufficient detail to enable the Auditor to trace individual transactions from source documents to the output and vice versa. If any of these

conditions does not exist, the auditors will have to rely on computer - oriented controls.

The Auditor may choose this approach because it is less costly and requires limited EDP knowledge.

Auditing around the computer is an acceptable and often desirable approach when the informational needs of the client's organization require it to maintain the necessary source documents and detailed output. The approach is good if the Auditors are satisfied with controls and are able to gather sufficient evidence.

Round the computer audit approach is acceptable when the volume of data is small and well organized, output from the computer more detailed and can be correlated with output and there is no serious complexity in the calculation and manipulation of information.

However, auditing around the computer become unacceptable if this approach is used because of lack of Auditor's expertise regarding computer processing.

This approach has also been criticized because getting to grips with the system in detail is very time consuming and hence costly.

Further, the controls may not be strong enough for the auditor to place reliance on them.

Auditing through the Computer approach

Auditing through computers means accessing, testing, processing, analyzing and reporting the electronic data in their electronic state with the objective of ensuring that it conforms to specification and is valid (Onukagha, 1993). Robertson and Davis (1988) opined that Auditing through the Computer refers to the auditor's actual evaluation of the hardware and software to determine the reliability of operations that could not be viewed by human eyes. This approach requires that the auditor should be conversant with the working of the computer and how the computer can help us facilitate this work. Auditing through computer has become more common in practice because more and more computer systems do not operate as speedy calculations but have significant control procedures built into their systems.

Because of the modern trend in computer technology, e.g. terminal based, advanced programme techniques, application packages, microcomputers, etc, it is recommended approach.

There are three ways in which the auditor uses the computer to perform audit procedures:

1. processing the auditors test data on the client's computer system as a part of test controls;
2. testing the records maintained by the computer as a means of verifying the client's financial statements, and,
3. using the computer to perform audit tasks independent of the client's records.

These procedures are accomplished by use of test data, generalized audit software and micro - computer aided auditing (Arens and Leobbecke, 1988).

Controls in EDP Environment

Controls in EDP environment are mainly internal controls instituted by management to provide proper processing of functions of the data processing department. There are two forms of controls in an EDP environment:

- i. General or organizational controls, and
- ii. Application or procedural controls.

General or Organizational Controls

These refer to the overall information processing environment and have a pervasive effect on the entity's computer operations. Monwuba (1995) maintained that general controls are designed to ensure an adequate division of responsibilities in the computer department, controls over the work of computer operators, controls over the usage and storage of files and adequate fire precautions and standby arrangement. General controls also involve systems development controls such as establishment and review of systems development standards, authorization and approval of works to be done, file conversion controls, system and programme testing and documentation.

General controls can be classified into five categories:

- i. Organizational controls
- ii. Systems development and modification controls;
- iii. Hardware and systems software controls
- iv. Security and access controls
- v. Operation and data controls.

In the information literature, general controls are sometimes been referred to as supervisory, management, or information technology controls.

Application or Procedural Control

These are controls under the influence of programmes developed for various applications to ensure completeness and accuracy of processing and can be sub-divided into input, output conversion, output, processing and 'master files controls. The overall objective of each of these controls is to ensure that information obtained from the computer processing environment is complete, sufficient and reliable.

The duty of the Auditor, internal or external, is to ensure that these controls exist and that they are being used in the day - to - day operation of the organization.

Testing Internal Controls

Internal control has been defined as the whole system of controls, financial and otherwise, established by the management in order to carry on the business of the enterprise in an orderly and efficient manner, ensure adherence to management policies, safeguard the assets and secure as far as possible the completeness and accuracy of the records. The Individual components of internal control system are known as "control" for "internal control".

The Auditor tests internal control when he wishes to place reliance in the controls in determining whether the accounting records are available. Testing of controls in computer-based systems is for the same purpose as testing controls in manual systems. In manual systems, controls are tested in one of two ways:

- i. By observation: This method is preferred when no documentary evidence of the control is retained. Payment of wages, the physical security of premises or the counting of stock are some of the examples.

- ii. Test of Controls: These are used where documentary evidence that the control has functioned is available. Examples are verification of wage calculations or the approval of purchase invoices. Compliance testing may involve.
- iii. Examining evidence that controls has been exercised; and,
- iv. Reperforming of some or a" of the steps that a person exercising the control was supposed to performed.

Controls in computer systems differ from that of manual in the kind of evidence examination and reperformance of steps.

The examination of evidence will include examination of exception reports, reconciliation reports, edit reports and missing documents reports. The following problems may arise in reviewing the evidence gained by such examination.

- i. such reports are not always retained;
- ii. the reports may not be complete;
- iii. there is no assurance that the logic of the programme control was correct and
- iv. if there is no exception reports, it may be because there are no exceptions or it may be because the programme control does not exist or not work (Millichamp, 1998).

Reperformance can therefore be the best approach. Techniques that are used include:

- i. Manual processing: This is possible. However, difficulties arise because of the volume of input usually found.
- ii. Complete assisted performance: This is more promising and greater assurance is usually gained. The traditional technique is to use audit test packs. A test pack consists of data prepared for the specific purpose of testing the operation of a computer programme. It should contain a mixture of valid and invalid data including all the error conditions in which the auditor is interested. The Test pack may be prepared by the auditor or may be the standard test data used by the computer department to test the programme.

- iii. Parallel Simulation: This technique can be summarized as the client's data, auditor's programme because it uses specifically developed programme to simulate the operations of the live programme

The problems which EDP systems pose to the auditors

Nweke, Ekwueme and Okoye (1997) outlined the problems as follows:

1. EDP systems take time to study and understand;
2. Errors are difficult to trace
3. internal control is difficult to set up as a result of centralization of most accounting functions in the computer
4. audit trail is lost as data are entered directly to the computer
5. sorting is difficult because source documents are often kept away and reliance placed on stored data.
6. detection of data occurs when old data are deleted from magnetic types to accommodate new ones. This presents problems of audit trail, etc.
7. fraud takes time to uncover and could build up to millions of naira.
8. computer is feared and regarded as infallible, the tendency is relaxation and fear of supervisors.
9. the use of micro software involves control loss because micros are stored at different managerial centers.

Some specific audit problems include:

1. totals and sub-totals normally given by day books are not easily verifiable.
2. documents used for two or more purposes may have been sorted into a sequence useful for the second process, leaving the process difficult to verify.
3. where there are large numbers of transaction of the same kind the system may deal with those in total, so that test checking in detail becomes extremely difficult.

Conclusion/Recommendations

The computerization of accounting records is posing new challenges to the work of Auditors. These challenges cannot be neglected because Auditors must have to form opinion on whether the financial statement presented before them, give a true and fair view of the financial position of the understanding at a stated date.

To remain professionally relevant and competitive in the face of the technological innovations of this era, the Auditors cannot but acquaint himself with the full knowledge of the computer and auditing procedures.

Auditing through the computer is now in vogue because it requires a full knowledge of the workings of the computer. Auditing round or around the computer is obsolete. Any computerized organization that is still auditing around the computer is trading on the verge of collapse.

This paper therefore calls on curriculum planners to make computer studies compulsory at both-the secondary and tertiary levels so as to enable prospective auditors to cope with the new technological innovation.

The acquisition of the necessary auditing skills is necessary but not sufficient if the auditor is not computer literate. Auditors should be trained and retrained so as to enable them to develop and acquire the necessary skills for handling computerized audit assignments because mere reliance on the statements of computer specialist cannot absolve them of liabilities.

Lastly, the government can assist by subsidising the prices of computers that are being imported into the country or by making it completely tax-free. This would enable organisations and individuals (including the auditors) to be able to procure computers at affordable prices because mere training without personal computers or computers in the offices is useless.

REFERENCES

- Arens, A. A. and Leobbecke, J. K (1988): Auditing: An Integrate Approach (7ed) London, Prentice Hall pub.
- Fasua, K. O. (2001): Computing Techniques and Information Technology Unpublished. ANAN Study pack.
- Mckeown, J. C. (1976): Computer Assisted Institution for Elementary Accounting. Accounting Review, January. P.123
- Millichamp, A. H (1998). Auditing (7ed) London. Aldine pub.
- Monwuba, O. M (1995). Auditing and Investigation Onitsha. Fortune Pub.
- Nwakalo, J. N (1995): Computer Appreciation for Beginners Awka. Future Tech. Pub.
- Nweke, M. M., Ekwueme, C. M. and Okoye, P. V. C. (1997). Modern Auditing Onitsha, Snaap pub.
- Ojaide, F. (1996): The Auditor and the Challenges of Computer Application: ICAN News 1 (4) 20-21.
- Onukwagha, J. (1993). Auditing through the computer. The Nigerian Accountant xxvi (4). P.28.
- Robertson, J. C. and Davis, F. G. (1988). Auditing (5ed) Texas. Business pub.
- Ukwuegbu, I (1994). New Trends in Computer Auditing. The Nigerian Accountant 27 (4) 38 - 39.