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The influence of computer auditing in auditing firms in the Accra Metropolis, Ghana

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Abstract
Ghanaians in the accounting profession began using computers to process data and information in early 1980's. Little attention was paid to the use of computers in auditing due to its limited use.
After 1990, computerized auditing became widespread in Ghana due to the stimulation computers brought with its introduction.
Very few auditing firms have adopted the system of Computer auditing. Majority of auditing firms using the computer to audit are met with numerous risks looking at their level of information communication technology expertise, experience and the sophistication of the computers. The case for the Equity funding corporation occurrence in the USA in 1973 supports this claim. The risk of the auditing computers being attacked by cyber criminals, systems analysts manipulating the computer may render the practice of auditing around the computer useless. This may eventually lead to accounting malpractice. As a result the introduction of computerized auditing evolved. According to Millichamp (1993) the aim of an audit is to empower the auditor to express his opinion on the financial statements of an enterprise, if the accounts show a true and fair view or not. When doing computer auditing or not, the basis of the auditor forming an opinion on the truth and fairness of the financial statements remains the same Okine, (1996).
The aim purpose of this research is to examine the introduction of computer auditing and explore the impact of computer auditing on the auditing staff and the auditing firm in general. The research employed questionnaires and direct interviews for this study.
Form the findings of this study, it can be implied that, firms, which audited through the computer, did so in order to establish control programmes built into the computer. All firms provided adequate education to the employees on the need to adopt computer auditing. The employees responded favorably to the introduction of computer auditing.

Keywords: impact, computer, auditing, Ghana, case, firms, Accra, metropolis

Introduction
Background of the study: In recent years, Computerization has revolutionized the accounting and control methods of many business concerns.

The early computers were very expensive and were patronized by large business organizations. As technology initiation increased, computers became cheaper and common and were introduce in virtually all business organizations. From that time onwards, organizations moved from the manual system of recording accounting data to computerized accounting.

In Ghana, the use of Computer to process business data began in the 1980's. The accounting use of Computers was so limited at that time and auditors paid little attention to them. From the early 1990's, the increased use of Computers has stimulated the introduction and use of computerized auditing by the auditing firms in Ghana.

Computer auditing which is decreased as auditing in a computerized environment is in its introductory stage in Ghana. For instance, Price Water House Coopers officially launched Computer auditing in Ghana. Auditors now regularly have to consider accounting systems which are based, to some extent, and a Computer in order to conclude whether the accounting records produced, form a reliable basis for the preparation of the financial statements.

Thus, in spite of the introduction of computer auditing in Ghana, the basic adjective of the auditor to form an opinion on the truth and fairness of the financial statement remains the same, but the audit procedure has changed.

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Statement of the problem

Since the introduction of Computer auditing, the speed and the neatness of audit work has improved. In addition, the auditor has been relieved of a great proportion of the audit workload as Compared to the load of work under manual auditing. Applications such as the electronic audit working papers have relieved the auditor the task of preparing his own working papers.

It will therefore be expected from the above Computer auditing would be on the proliferation in the Ghanaian. This is rather not so. Only a few auditing firms have adopted the system of Computer auditing. For example, price water house coopers, one of the leading auditing firms in Ghana, formally launched Computer auditing in 1999.

Most auditing firms practicing Computer auditing are only auditing around the Computer which is very risky, considering the case for the Equity funding corporation which occurred the in the USA in 1973. In this case, systems analysts manipulated the computer, which rendered the practice of auditing around the computer useless leading to a big fraud. This particular case led to the introduction of auditing through the computer.

Conditions such as lack of funds; to train the audit staff to become computer proficient and also to equip the audit staff with the lap top computer deter auditing firms form practicing computer auditing (auditing through the computer). Also, auditing staff unwillingness to switch to computer auditing could be said to be another reason slowing the introduction of computer auditing in Ghana. Thus, the above demerits associated to computer auditing, impedes the interest of the Ghanaian auditor to adopt computer auditing.

In the light of these, the study was conducted to find out the impact of the introduction of computer auditing on the auditing, and the auditing firm in general in the Ghanaian environment.

The purpose of the study

The specific objectives of the study are stated below:
1. To examine the introduction of computer auditing.
2. The impact of computer auditing on the auditing staff and the auditing firm in general.
3. The impact of computer auditing on the audit procedures
4. The future of computer auditing in Ghana.
5. The application of computer auditing.

Significance of the study

At the end of the study, this work should serve as a first hand source of information for those doing research in the area of computer auditing. Besides, it should also serve as the basis for future research work in this topic area.

The study should also serve as a guide for auditing firms, which have plans of introducing computer auditing and also as a reference material for auditing firms, which are already into computer auditing.

The study can also serve as a teaching material for accountancy lectures and also as learning material for accounting students.

Moreover, this study would complement other research works that have already been undertaken in this area.

Methodology

Data used for the study was collected from many sources.

Simple random sampling was used to select respondents among the auditors (partners, managers and trainees) in the auditing firms and questionnaire were administrated to them to find out about the application of computer auditing and the problems they encounter when doing their job.

Direct interviews were held to explain technical questions to the audit staff and also for the audit staff to clarify answers, which are ambiguous.

References were also made from books on computer auditing manuals from auditing firms and various reports published by the accounting professional bodies.

Limitations

Due to financial and time constraints, it was not possible to visit many auditing firms in Ghana.

The study was continued to the Accra metropolis of the Greater Accra Region of Ghana because all the major auditing firms have their offices in the Accra metropolis in spite of these limitations, large sample was selected for the study to allow generalization to be made.

Literature review

General overview

Auditing is defined by the auditing Practicing Board (APB) as "an audit of financial statement in an exercise whose objectives is to enable auditors to express an opinion whether the financial statements give a true and fair view (or equivalent) of the entities affairs at the period end and of its profit or loss (or income and expenditure) for the period end then ended and have been properly prepared in accordance with the applicable-reporting framework (for example relevant legislation and applicable accounting standards) or where statutory or other specific requirement prescribed by the term present fairly.

Objectives of auditing

The auditor should be an independent person who is appointed to investigate the organization, its records, and the financial statements prepared from them, and thus form an opinion on the accuracy and the correctness of this financial statement. The prime aim of the financial statement is to enable the auditor to express his opinion that "these accounts show a true and fair view" or of course to say that they do not. The objectives of an Audit Are:

1. **Primary**
To produce a true and fair financial report by an auditor.
2. **Subsidiary**
a) To detect errors and fraud
b) To prevent errors and fraud by the deterrent and moral effect of the audit
c) To provide spin-off effects. The auditor would be able to assist his client with accounting, systems, taxation and financial and other problems.

Types of audit

There are four types of audit *viz*;

A. Statutory Audit

These are audit carried out because the law requires them. Statute, which building requires audit to be done, includes the company's Act 1985.Society Act 1986, Friendly Society Act 1974 and others of no examination importance.

B. Private Audit

Independent auditors conduct a private audit into a firm's affairs because the owners desire it, not because the law requires it. Examples are audit of the account of sole trader and partnerships.

C. Internal Audit.

An internal audit is one conducted by an employee of a business into any aspect of its affairs.

D. Management Audit

Management audit is an inquiry into the effectiveness of management.

The concept of computer auditing

Various authors have defined the concept computer auditing in the general way as stated by the Auditing Standards and Guidelines. But these authors further interpret it indifferent ways to convey their individual opinion.

A clear discussion of the concept, computer auditing in general would make the discussion meaningless. Millichamp (1993), views auditing as the appointment of an auditor to investigate the organization, its records and the financial statements prepared by the organization's management and thus form an opinion on the accuracy and correctness of the financial statement.

A computer is defined as any programmable electronic devices that can quickly calculations, store, rearrange, retrieve information or control another machine. The Auditing Standards and Guidelines (7.7.4) auditing in a computerized environment, states at the outset, that computer auditing describes how the principles of external audit should apply in a computer environment, including those relating to smaller computers. Audits are performed in a computer environment wherever computer based accounting systems, large or small, are operated by an enterprise for the purpose of processing information supporting the amount included in the financial statements.

Howard (1991) [7], in relation to the definition given by the Auditing Standards and Guidelines, points out that computer systems do record and process transactions in a manner which is significantly different from manual systems giving rise to such possibilities as lack of visible evidence and systematic errors. He emphasizes on the difference between manual and computer systems of recording transactions but does not say much about the controls.

Chambers (1993), in his book, Computer Auditing, describes computer auditing in a computerised environment with reference to the programmed controls carried out by the computer applications (such as sales, accounting and payroll) and the manual controls exercised by the users. According to him, the relationship between programmed and manual controls is important. He holds the view that auditors must consider the controls over data input and from, these applications and over data contained in the computer files and generated by the programs. Controls here refer to both general and applications controls. Applications controls are controls designed to aid the completeness, accuracy and validity of processing in a particular application. Whilst the general controls are the use of procedures designed to maintain a high standard of discipline with the computer environment. They relate to proper development and implementation of applications and the integrity of programs and data files of the computer

operations. From his definition, Chambers lays emphasis on the relationship between manual and programmed controls. Pick (1986), in his book, Computer Systems in Business, defines computer auditing to include controls built in the computer to monitor both systems and personal performance. He states that controls should be added to a system during its design stage.

lt can be seen from Pick's definition that he also makes reference to the controls build in the system and the personnel or manual controls. From the various definitions above, computer auditing can be viewed as a term coined to mean auditing a computer based system in an organisation with reference to the built - in controls in the computer and the manual controls exercised by the personnel.

Aims and objectives of computer auditing

Millichamp (1993) says the primary objective of an audit is to enable the auditor to express his opinion on the financial statements of an enterprise, if the accounts show a true and fair view or not.

Okine (1996) [11], also says that when doing computer auditing or not, the basis of the auditor forming an opinion on the truth and fairness of the financial statements remains the same. Taylor and Glezen (1994) [16] support Okine and Milichamp by saying that the aims and objectives of the auditor remain the same whether the computer is used or not.

The above authors are all of the view that the auditor determines the objectives in auditing by relating to management assertions of the financial statements and forming an opinion as to the truth and fairness of the financial statements. Okine (1996) [11] agrees with Howard by saying that," an individual document and its own sakes but rather processing of all items in a certain area is consistent with prescribed controls". Test data may be used to test how Simple transactions are processed to verify that, their outcome is in accordance with prepared data. Both valid and invalid transactions are out through to check that the invalid materials is duly thrown out by the computer resection process or transferred to suspense file within the system while the invalid data agrees with the expected betaincs.

Use of audit software packages

According to Sherer and Kent (1983) [13], general audit software packages or computer audit programs are an attempt to harness the resources of the computer to help the auditor by using the computer to audit itself. They are interrogatory programs, which in addition of being able to do the type of procedural test, which the pack can do, can be used to examine the information stored within the system. In general, a change in technology of accounting does not change the broad objectives of auditing. But with the introduction of computer, the auditor has to consider a new area of internal controls concerning the computer and secondly considers the adoption of a specialized audit technique.

Problems associated with computer auditing

Howard (1991) [7] holds the view that the introduction of computer auditing is saddled with some problems. He contends that the load of finance to develop Computer Assisted Auditing Technique (CAAT) and also to equip the audit staff with the needed computers is one of the problems

confronting computer auditing. He says that there is also the problem of additional training to the auditors to become computer proficient. The auditors to need further training to be able to use computer audit programs. He further states that the lack of documentary evidence, which may give rise to the lack of audit trails, is another problem. He concludes that most procedures audit may still be carried out mutually, making computer auditing not absolutely independent.

Chambers *et al.* (1987) prints out that all auditors must be computer auditors as most systems are now computerized and auditors who cannot cope with the audit of computer applications are relegated to the role of audit clerks. He says the most efficient use of these software packages occur when the users comprehend the computer system in use. To process this understanding, auditors need to have a workable computer vocabulary and should be familiar with the way data are processed on machine-readable records and stored in computer files.

Generally, problems that affect the smooth introduction of computer auditing in Ghana could be traced to inadequate additional training in computing. In a recent discussion, it was emphasized that most auditing firms employ unqualified staff like Royal Society of Aris (R.S.A) and General Certificate Examinations - Advanced level (G.C.E - 'A" level) graduates who are not competent. Also, it takes a long period of training before they can perform well on the job. In the light of these, the leading accounting firms in Ghana have made it a policy to employ young graduates who, the auditing firms believe have a more broadened mid, more competent and also can be trained within a shorter time.

The future of computer auditing

Since the first computer, Univac 1, made it appearance in 1951, large medium size business organizations have been using computers to process their business transactions due to the many advantages associated with the computer.

According to Scint Exupery (1956), "The machine has not come to isolate man from the many problems of nature but to involve him more deeply. As computers become more flexible, cheaper and easier to use, all organizations including small firms, will switch to computer processes and auditors have to consider the computer in their auditing.

In short, the computer has made a man and has come to stay. All auditors in the near future would have to be computer proficient. Computer auditing will absolutely take over the manual system of auditing.

Methodology
Population

The target population of this study was made up of auditing firms in the Accra metropolis. On the whole, the total number of firms which constituted the population of the study was five.

Viz: Nii Quaye-Mensah and Associates
Pannel Kerr Forster Chartered Accountants
Price water house Coopers, Gulf House
KPMG
Ernest and Young

Sample and sampling procedure

The Accra metropolis was chosen for the study because the leading auditing firms in the country are situated there.

Out of the many auditing firms in Accra metropolis, purposive sampling was used to choose the auditing firms in the country.

The sampling method mentioned above, was chosen because of the belief that all the international firms had been practicing computer auditing for some time and would be in the best position to provide the necessary and adequate information needed for the study.

The researcher also used purposive sampling in selecting the leading local auditing firms in the country. Simple random sampling was employed in selecting the five firms.

The random sampling was done by writing all the names of the leading local auditing firms in the country on pieces of paper, which was folded nicely to avoid identification. These were finally mixed together before five of them were picked at random for the study.

In selecting the leading local firms, the purposive and simple random sampling methods were used because it was the select of the researches that the leading local auditing firms had big clients, who were using computer accounting systems and therefore, were expelled to practice computer auditing and that each of them could equally provide the necessary and adequate information needed for the study. The questions were given either to a partner, audit manager or an audit trainee by simple random sampling. Thus a total often were given a questionnaire.

Instruments for this study

For this study, questionnaire and direct interview were used for the interview. The questionnaire was used because if the tight schedule of the respondent and since they were literate they could answer the questions at their convenience. The questions were made up of open and closed-ended questions. The open-ended questions were used in anticipation that the respondent would not be limited and thus have a room to contribute more ideas on the topic understudy. In all, 32 items were designed to elicit the impact of the introduction of computer auditing on auditing firms. The questionnaires consist of 118 open ended questions and 14 close-ended questions.

A direct interview was used where the respondents had enough time to sit with the researcher and answers the questions posed by the researcher. In each of the auditing firms, at least one employee was interviewed on the topic under study.

In administrating the questionnaire and conducting the interview, personnel vi1sits were made to the auditing firms. The researcher with an introductory letter from the Accounting Department of Cape Coast Polytechnic craved the indulgence of the partners of the various auditing firms for their corporation. Out of the questionnaires administered, only seven representing 70% were received.

Limitations

The researcher close only ten auditing firms out of the over fifty auditing firms in the Region, due to a funding problem. The main problem encountered was unavailability of the auditing staff (partners, managers and trainees) due to usual tight schedules like going on treks and visiting clients.

The researcher had a plead with some of the auditing staff before they could accept the questionnaire or grant an interview because the researcher were not having valid student identification cards witnessing that they are students.

Data analysis and findings
Introduction

This chapter is concerned with the data analysis and findings of the study. The data analysis and findings is based on the response to the questionnaires. It is also based

on direct interviews with auditors in selected Auditing firms.

Characteristics of firms

Table 1 shows the nature of the auditing firms on which the study was conducted.

Table 1: Nature of auditing firms

	Number of firms	Percentage
International firms	1	20
Local firms	4	80
Total	5	100

There was a fair coverage of local and international auditing firms in the Accra metropolis. That is one international firm and four local firms.

Table 2 shows the position of the Respondents.

Table 2: Position of respondent

	Numbers	Percentage
Audit Partners	0	0
Audit Managers	7	70
Audit Trainees	3	30
Total	10	100

Table 2 also reveals that out of the total respondent, none of them was an audit partner. The audit partners were very much attached to the audit work with time to spare as compared to the audit managers and trainees, who responded to the questionnaire.

Practice of computer auditing

All the five (100%) auditing firms practiced computer auditing. Thus, these auditing firms considered at least the input and output of the computers of these, four (80%) of these firms practiced auditing around the computers, that is, they considered just the input and output of the data on the client's computer. Only one (20%) practiced, auditing through the computer, that is, they considered the control system of the client's computer in addition to the output information provided by the clients. (See table III below). Table II describes the distribution of the types of Computer Auditing firms.

Table 3: Distribution of the types of computer auditing firms

	Number of firms	Percentage
Auditing around the computer	4	80
Auditing through the computer	1	20
Total	5	100

It can be deduced from table 3 that most auditing firms in Ghana were still in the age of auditing around the computer with a few practicing auditing through the computer.

Table 4 shows the various reasons why firms introduced computers auditing in their audit works.

Table 4: Reasons for computer auditing

	Number of firms	Percentage
Meeting client's changing environment	5	100
Uniformity in audit approach with Sister firms on the globe	1	20
Cost effectiveness	4	80

All the five of the auditing firms visited adopted computer auditing in order to meet the changing environment of the clients. Almost all their client has computerized their accounts thus making it obligatory on the auditing firms to adopt computer auditing.

Of these auditing firms, four (80%) also have cost effectiveness as one of the reasons why they adopted computer auditing, one (20%) of these firms adopted computer auditing. Because they had to comply with international standards set by sister firms on other parts of the globe. Table 5 deals with the reasons for auditing around the computer.

Table 5: Reasons for auditing around the computer

	Number of firms	Percentage
Lack of technical staff	3	60
Lack of various software	2	40
Risky relying totally on software for all clients	2	40
Difficult to have one software for all clients	2	40
Clients lack of complex systems	2	40

The lack of technical staff could be seen as the major reason why most of the firms audit around the computer. (See Table 5). The difficulty to obtain one specific software for all the clients, due to their different accounting systems, was also another major reason. The lack of various software and the risk involved relying totally on software were accepted by just two (40%) firms as the reason why they audit around the computer. Table 6 deals with the reasons for auditing through the computer.

Table 6: Reasons for auditing through the computer

	Number of firms	Percentage
Establish control programs to build in computers	2	40
A software designed to allow auditing through the computer	1	20

The firms, which practiced computer auditing, were of the view that they adopted auditing through the computer because they needed to establish the control program built in the client's computer. They had to check the efficacy of these programs. Only one (20%) of these firms had designed software, which allowed auditing through the computer thus making it possible for them to audit through the computers.

Employees response to introduction of computer auditing

All the employees in the selected auditing firms were in favour of the introduction of Computer Auditing. The auditing firms also provided adequate orientation programme for the workers before introducing the system. This was also accepted by all the five (100%) firms contacted.

In addition, the prestige associated to being trained, as a computer and reduction in audit work were other reasons why the employees responded favourably to the introduction.

Finally, all the employees accepted the fact that the world is going through technological changes and so one must catch

up with technology thus, causing them to accept the system of computer auditing.

Table 7 shows the use of CAAT by auditing firms.

Table 7: Use of CAAT by auditing firms

	Number of firms	Percentage
Firms using CAAT'S	1	20
Firms not using CAAT"S	4	80
Total	5	100

All the firms, which practiced auditing through the computer, use some form of CAAT in their audit work. They constituted 20% of the selected firms. (See table VI). The rest of the firms, which constituted 80% of the firms, did not use any CAAT in performing their functions. This was due to the fact that they audit around the computer.

Summary, conclusion, and recommendations
This chapter deals with the summary of the study. Conclusions are drawn from the findings and some suggestions are offered.

Summary
The main objective of this study was to find the impact of the introduction of computer auditing on auditing firms with reference to the following:
1. The introduction of computer auditing.
2. The use of Computer Assisted Audit Techniques (CAAT).
3. Problem of funds to finance the CAAT implementation.
4. Effect of computer auditing on the audit procedures.
5. Benefits of computer auditing.
6. Problems of computer auditing.
7. Future of computer auditing.

Purposive random samples of two international auditing firms were selected. Also simple random samples of five leading local auditing firms were selected, making a total sample size of seven auditing firms. Direct interview with the auditing firms' staff and questionnaire were used as the main instrument for the study. The questionnaire was administered to the seven firms and five responded to it.
Tables, Percentages and Frequency distribution were used in the analyzing of the data collected.

Findings of the study
Position of respondents70% of the respondents were audit managers and they were qualified Accountants. 30%of the respondents were also audit trainees.

The effect of the introduction of computer auditing
All the auditing firms, which were surveyed, practice computer auditing. Most of the firms (80%) audited around the computer and (20%) through the computer. The man reasons given for the introduction of computer auditing were lack of technical staff, difficulty to have one common software for all clients, clients not having complex computerized accounting system and lack of various software.
Firms, which audited through the computer, did so in order to establish control programmes built into the computer.
All firms provided adequate education to the employees on the need to adopt computer auditing. The employees

responded favorably to the introduction of computer auditing.

Computer assisted audit techniques
(CAAT25% of the firms used CAAT in auditing. Among the CAAT used by firms was the interactive Data Extractive Analysis (IDEAS) five, which is used for sampling tests, interrogating data and to extract specific transactions. Other techniques used AS 2 which was used for planning substantive test and test of detailed reporting, and the panning programme which allow the auditors to really understand the accounting process and substantive analytical procedures which enhances the explanation of variances.

Problems of funds to finance CAAT implementation
The one firm that used the CAAT to audit faced the problems of funds to finance the implementation of CAAT. Some of the problems were training of audit staff on the use of CAAT, provision of personal computers for the auditing staff and buying or developing CAAT

Effect of computer auditing on the procedure
About 80% of the firms claimed that the computer auditing had changed the firms audit procedures. Some of these changes were that, audit work sheet are now computer generated, planning and generation of final accounts were handled by computer and corrections, queries and amendment to audit files were done on the screen.

Benefits of computer auditing
The major benefits were the reduction of workload and the efficient delivery of audit work, shorter time in the completion of audit assignment and the cost effectiveness.

Problems of computer auditing
The main problem was the maintenance of computer hardware. Other problems were the theft of laptop computers, which were carried around by the auditors and the conflict in managing culture change.

Future of computer auditing in Ghana
From the data collected, it can be concluded that most of the firms are strongly in favor of the new technology i.e. Computer Auditing. This means that Computer Auditing has come to stay and it has a very bright future in Ghana.

Conclusion
From the findings of the study, it can be concluded that audit client-changing environment of processing accounting data on a computer necessitated the introduction of computer auditing.
It can also be concluded that only a small number of auditing firms use CAAT or audit through the computer due to the lack of funds to train the audit staff, buy personal computers for each of the audit staff a and develops a CAAT.
Furthermore computer auditing has changed the audit procedures of auditing firms in the sense that audit the sense that audit worksheet are now computer generated and generations of final accounts are handled by the computer.
It can also be concluded that, although there are problems of computer auditing like the maintenance of computer hardware and conflict in managing cultural change, the

benefits of computer auditing like reduction of the workload, the efficient delivery of the audit work and the cost effectiveness greatly outweigh the problems.

Finally, the introduction of computer auditing can be hailed as a blessing because it has had a positive impact on the audit process and it has a very bright future in Ghana.

Recommendation

In the light of the findings and conclusions, the researcher suggest the following

1. The training of auditors in computing should not be the sole responsibility of the auditing firms. The institute of chartered Accountants (Ghana) and other donor agencies must help.
2. Computer training programmes should be well supported with teaching materials, equipment and relevant textbooks.
3. The small firms should be encored to adopt computer auditing (auditing through the computer) due to its many advantages.
4. Common auditing software, which can take care of all the clients various accounting systems, should be developed.
5. All auditors (including audit trainees) should be motivated to adapt to computer auditing.
6. Staff of the Information Technology (IT) section of auditing firms should be trained to ensure the upkeep of the computer hardware. (Various Information Technology (IT). Sections of auditing firms should be well developed to come out with their own audit software. Effective security measures should be put in place to safeguard the laptop computers, which is given to the audit staff.

Areas for further research

Further studies should be conducted on the topic, "The impact of computer auditing on corporate accounting reporting. This in fact will help to make generations of findings more reliable.

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