

The Impact of Electronic Accounting Data Processing Risks on the Quality of External Auditor Reports

Redjem Khaled^{1*}

¹Setif 1 university Ferhat Abbas (Algeria),

redjemkhaled@uni-setif.dz

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Abstract

This study aimed to identify the risks of automated accounting data processing and their impact on external audit quality. The study found that risks of automated accounting data processing affect external audit quality, with personnel-related risks having the most significant impact. The study provided several recommendations, most notably raising auditors' awareness about these risks and how to deal with them, and their impact on audit quality through training courses in this field.

Keywords

External auditor, risks of electronic accounting data processing, quality of external audit.

JEL Classification : M15; M42; M41

1. Introduction

The widespread use of information and communication technologies has led to many risks related to the security and integrity of electronic accounting information systems. This is because the development in automated accounting data processing methods has not been matched by similar development in control practices and regulations, nor by comparable development in the knowledge and experience of employees in these establishments.

As the auditing profession plays a significant role in overseeing the accounting system in general, this profession has received considerable attention to improve its quality. With this new form of automated data

processing, it has become necessary to improve and enhance the auditor's ability to keep pace with and understand the processing environment. Auditing firms now face problems and risks resulting from technological developments, requiring auditors to be aware of and familiar with the types of risks associated with automated data processing systems, and to be equipped with the necessary methods and tools to detect and avoid these risks to achieve audit objectives efficiently and effectively.

Accordingly, the following problem can be raised:

To what extent do the risks associated with automated accounting data processing affect the quality of external auditors' work?

Research Objectives:

- Assess risks associated with automated accounting data processing
- Highlight necessary security policies to mitigate risks
- Examine the audit process in the context of automated accounting data processing
- Identify the most impactful risks on external audit quality in automated accounting data processing environments

Study Hypotheses:

- There is an impact of personnel-related risks in automated processing on external audit quality
- There is an impact of data-related risks in automated processing on external audit quality
- There is an impact of hardware-related risks in automated processing on external audit quality

Previous Studies:

Several studies have shown the impact of electronic accounting data processing risks on the quality of external auditor reports, agreeing that digital transformation in the accounting environment creates major challenges related to data reliability and financial reporting accuracy. On one hand, reliance on electronic systems such as ERP systems and artificial intelligence increases the risks of unintentional errors or data manipulation, especially in the absence of effective security controls (Al-Htaybat et al., 2018; Brown et al., 2017). The complexity of these systems makes it difficult for auditors to track errors, which may affect the credibility of their opinion in final reports.

On the other hand, studies such as (El-Sayed & Mohamed, 2020) and (Al-Zaqeba & Al-Sufy, 2021) focused on cybersecurity risks such as data breaches or manipulation, which increase the likelihood of distorted financial information, requiring external auditors to possess advanced technical skills to understand these risks and establish appropriate audit procedures. Some research (such as Smith & Johnson, 2019) also indicated that excessive reliance on automated tools without adequate human review may lead to incorrect conclusions, reinforcing the need for a balance between modern technologies and human expertise in the audit process.

In general, these studies concluded that ensuring the quality of external auditor reports in the digital environment requires developing integrated audit standards with technological risks, enhancing auditors' skills in data analysis and cybersecurity, in addition to their cooperation with information technology experts to ensure data accuracy and reliability.

1.1 Automated Accounting Data Processing Systems:

The term "automated accounting data processing systems" is synonymous with computerized accounting information systems, defined as "accounting data that includes all accounting branches and is processed electronically by computer with high accuracy, to obtain results used in decision-making for all beneficiaries, with minimal time and effort."

1.2 Functions of Automated Accounting Data Processing Systems:

The introduction of computerized accounting information systems in any establishment has many benefits achieved by these systems through performing their functions, whether these systems are created from scratch or result from the transformation of traditional manual accounting systems into computerized accounting systems resulting from computerization of manual systems.

Among the most important functions performed by these systems are:

- Collecting, classifying, and indexing accounting data
- Reviewing, entering, and storing accounting data in the system
- Operating and processing accounting data to convert it into information that serves the organization's objectives
- Storing accounting information and managing databases
- The function of transferring and delivering information to its users and displaying it in an appropriate manner
- The control and data protection function, where data is protected from errors, manipulation, dangers and threats, and ensuring data accuracy and integrity, and thus information accuracy.

1.3 Risks of Automated Accounting Data Processing:

The computer performs arithmetic and logical operations by making effective and quick comparisons, and it also stores large amounts of data and retrieves them in a very short time, and helps in preparing various reports very quickly. Despite these many and varied advantages of computers in the electronic accounting environment, we will address in this requirement the types and causes of risks of automated accounting data processing, and the risks can be summarized in the following table:

The risks can also be summarized as follows:

- Main risks:

- System integration errors (System Integration Errors)
- Risks of relying on unreliable systems
- Difficulties in tracking changes in electronic records

- Impact on auditing:

- Increased difficulty in detecting material errors
- Challenges in evaluating internal controls
- Need for specialized audit tools

1.4 Procedures to Reduce Risks of Electronic Information Systems:

There are many means and procedures that any organization can use to reduce risks in the information technology environment, including:

1. Encryption : A method used to ensure the confidentiality, privacy and integrity of data exchanged between different parties to ensure that unauthorized parties do not access that data, where the sender uses a specific key to encrypt the data and convert it from the normal understandable format to an encrypted format that cannot be read or understood, then sends it to the recipient who in turn uses a key to decrypt and return the data from the encrypted format to the normal format again.
2. Virus Protection Procedures : There must be procedures to protect the system from viruses, and the most important of these procedures is the use of virus detection programs and their continuous updating, in addition to not opening any file without verifying its source.
3. Creating Backup Copies : Backup copies of data and programs are created to face the possibility of loss or distortion of data or programs due to operating errors or penetration of information system programs.
4. Firewalls : A set of interconnected programs located at the boundaries of the computer network, aiming to verify the identity of any person trying to

access the system by entering their name and password, which are matched with the name and password stored in the database to identify authorized persons to access and enter the system.

Firewalls are also used to determine the data that each user can access according to the nature of their tasks and responsibilities within the company.

5. Password Management (Password) : Organizations usually follow control procedures aimed at helping users choose passwords that are difficult to guess, making it difficult for unauthorized parties and hackers who try to guess passwords to penetrate the organization's information system. Among these procedures are:

- Requiring the user to change their password periodically
- Setting a minimum limit for the number of symbols that make up the password
- Educating the user to use all letters, numbers and other symbols in their password, making it difficult to guess using computer programs designed for this purpose and used by hackers
- Educating the user to avoid easy passwords
- Educating the user to keep their password confidential
- Terminating the connection with the party that enters a wrong password three times in a row

In addition to:

- Technical procedures:

- Data encryption
- Firewalls
- Intrusion detection systems

- Organizational procedures:

- Strict access policies
- Permission management
- Backup procedures

- Audit procedures:

- Penetration tests
- System log reviews
- Access control evaluations

1.5 External Auditing:

External auditing is a process performed by an independent person by examining financial statements and accounting records with the aim of giving an opinion on the fairness and truthfulness of financial statements and annual accounts and their compliance with accounting standards.

1.6 Accounting Auditors in Algeria:

Given the importance of the accounting auditor profession, the Algerian legislator was very keen to organize it well, to ensure its good performance, as stated in Law No. 91-08 issued in 1991 related to the profession under study. This law was repealed by Law No. 10-01 dated June 29, 2010, which gave a new image to auditing practitioners in Algeria, as it specified the conditions that must be met by the auditor to practice this profession, and clarified the tasks that fall under this profession, addressing their fees, rights, duties, responsibilities, and the standards that the auditor must adhere to. This law was accompanied by a set of decrees and decisions, some of which established organizations related to the profession, and some of which determined the profession's behaviors and what auditors must adhere to, and the conditions that must be met to join the profession. (Law No. 10-01 dated 11/07/2010).

1.7 Auditing in the Context of Automated Accounting Data Processing:

According to what is stated in International Standard 401 (Auditing in a Computerized Information Systems Environment), the overall objective and scope of the audit process does not change in a computerized information systems environment. However, the use of computers will change the processing, storage and reporting of financial data, and may affect the accounting system and the internal control system in the establishment.

It is also the process of gathering and evaluating evidence to determine whether the electronic operating system preserves assets and maintains complete data, achieves the organization's objectives with a high degree of efficiency, and uses the organization's resources effectively.

Based on the previous definition, the objective of the audit process in the context of automated accounting data processing should focus on verifying:

- Appropriate accounting information systems that provide information for preparing financial statements and sound reports with high efficiency
- An effective internal control system that prevents or minimizes errors and violations

1.8 The Impact of Automated Accounting Data Processing on the Audit Process:

1.8.1 The Impact of Automated Accounting Data Processing on Evidence and on the Auditor's Scientific Qualification and Experience:

We will address the impact of automated data processing on evidence and then on the auditor's scientific qualification and experience.

First - The Impact of Automated Accounting Data Processing on Evidence:

The concept of evidence in electronic auditing did not differ from manual auditing, but the difference was in the nature of the evidence that the auditor can rely on, as automated accounting data processing had a significant impact on evidence collection procedures and their nature, and we can explain this impact through the following points:

1. The Emergence of Electronic Evidence : It means any information that is created, sent, processed, recorded or stored electronically, which the auditor relies on to verify the validity of operations and values included in financial statements.
2. Controls for the Auditor's Reliance on Electronic Evidence : For the auditor to rely on electronic evidence, they must consider the following:
 - Be fully aware that the extent to which electronic evidence can be relied upon depends primarily on the effectiveness of the internal control system
 - Deal well with the continuous impact of information technology on traditional evidence
3. Electronic Documentation in the Context of Automated Accounting Data Processing : Most documentation has become electronic, so the auditor must accept written information and electronic information as a documentary tool in a new form, within the framework of internal control procedures that ensure information security, preservation and non-alterability.

Through the above, we find that the appropriate evidence for expressing an opinion in the case of automated accounting data processing is electronic evidence, including: non-paper electronic documents, electronic signature, electronic fingerprint, and the control system for information security and safety.

In addition to:

- Positive aspects:
 - Improving evidence collection efficiency
 - Increasing the accuracy of financial analysis
 - Possibility of examining larger samples
- Challenges:
 - Difficulty in assessing the quality of input data
 - Challenges in verifying the validity of algorithms
 - Risks of excessive reliance on technology
- Affected quality standards:
 - Professional independence
 - Objectivity
 - Professionalism and professional judgment

Second - The Impact of Automated Accounting Data Processing on the Auditor's Scientific Qualification and Experience:

The auditor should have diverse scientific experience in all aspects and methods related to various audit processes. On the other hand, due to the continuous increase in the demand for information technology in all business areas, the organization works to create integrated jobs for the information technology team. Therefore, the credibility of automated data processing depends on the organization's ability to appoint individuals or consultants with specialized expertise in information technology. It has become necessary for auditors to train on how to use and deal with information technology, especially dealing with various software that can be used by the organization to read its records and reports. This requires the auditor to have the ability to deal with these elements so that they have specialized skills and high competencies that can be acquired through knowledge and training courses.

1.9 The Auditor's Risk Assessment in the Electronic Data Processing Environment:

Studying the internal control system and measuring the degree of risk represents the starting point before planning the audit process. According to International Auditing Standard No. (400), the auditor must assess inherent risks and control risks for material aspects in material data in the electronic information system environment, because they may have a general and specific probable impact on material errors in financial data, for example:

- Programmer employee errors (programmer, equipment operator, system user)
- Hardware and software malfunctions (software, maintenance, hardware)
- Fraud and manipulation (file sources, espionage, software modification, viruses)

Accordingly, the auditor determines the procedures that must be taken into consideration to collect appropriate evidence. When the organization uses electronic accounting instead of the manual system in its work, the auditor examines the internal control systems of automated systems to identify strengths and weaknesses to determine the size of their tests and the degree of risk that the audit process may be exposed to.

Conclusion:

Recent studies indicate that the digital transformation in the field of accounting has brought about radical changes in the external auditing profession, imposing a new reality that requires comprehensive adaptation at several levels. Possessing technical skills has become a basic requirement in the qualification of the contemporary auditor, no less important than traditional accounting experience.

The nature of audit evidence and methods of collecting it has changed radically, where digital data has replaced paper documents, and automated analysis tools have become an integral part of the review process. New types of audit risks have also emerged, especially those related to cybersecurity and electronic data quality, which necessitated the development of innovative methods to deal with these challenges.

In response to these changes, professional quality standards have witnessed noticeable development to keep pace with digital age developments. However, these transformations cannot be faced individually, but rather require broad institutional cooperation between all concerned parties. On one hand, academics bear the responsibility of developing educational curricula to graduate auditors equipped with the necessary digital skills. On the other hand, professional bodies must update the standards and legislation regulating the profession.

Companies also play a pivotal role in this equation, represented in developing technical infrastructure and providing the appropriate environment for professional development. As for auditors themselves, they are required to strive continuously to acquire new skills and keep abreast of the latest technical developments in their field.

This comprehensive transformation represents an opportunity to enhance the credibility of financial reports and raise the efficiency of the audit process, but at the same time it represents a major challenge that requires concerted efforts and comprehensive restructuring of various aspects of the profession to keep pace with the requirements of the digital age.

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