

**Dissertation Submitted in Partial Fulfillment of the
Requirements for a « Master- Startup » Degree
Specialty: Audit and management control**

THEME:

**The impact of digitalization on the
Liberal Accounting Profession
Case: B&B Audit and Advisory firm**



Project:

SimpleX

Presented by:

Miss. BENCHERIF Mokhtaria

Miss. ALLOUCHE Amina Selma

Supervised by:

Mrs. ZIANI Imen Hiba

Academic year

2023-2024

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الإهداء

إلى من كلله الله بالهبة والوقار .. إلى النور الذي ينير لي درب النجاح .. إلى من أحمل اسمه بكل افتخار أرجو

من الله أن يمد في عمرك وستبقى كلماتك نجوم أهتدي بها اليوم وفي الغد وإلى الأبد

والذي العزيز

إلى ملاكي في الحياة .. إلى معنى الحب والحنان .. إلى بسمه الحياة وسر الوجود

إلى من كان دعائها سر نجاحي وحنانها بلسم جراحي إلى أعلى الحيايب

أمي الحبيبة

إلى من كانت سندي وعزتي في الحياة إلى من منحتني الدعم والأمل

جدتي الغالية فاطمة

إلى نبعا الحنان وقوتي في الحياة إلى من كانت دعواتهما سر نجاحي

إلى جدي أحمد وجدتي بختة .

إلى توأم روحي ورفيقة درب الدراسة أختي الحبيبة هديل

إلى برعمتي وملاكي أختي حنان

إلى من كان رفيقا وسندا وأخا عزيزا أيمن

إلى أخواتي نرجس وأحلام .

إلى براعم عائلتي عبد الرحمان، سيرين، رفيق ولينا .

إلى أخوالي يوسف، عبد القادر ورشيد .

إلى من أسهم في تقديم العون والتوجيه خلال مشواري الدراسي عمي بشير

إلى من دعموني بالحب والعون طيلة مساري الدراسي إلى خالاتي رفيقة، فاطيمة، عائشة وفاطمة

إلى كل عائلتي بن شريف ودحماني .

إلى رفيقتي في الدراسة والبحث إلى من منحتني الدعم والمثابرة لإنجاز هذا العمل علوش أمينة .

مختارية .

Dedications

With deep gratitude, I dedicate this modest work to those whom, no matter the words I choose, I can never truly express my sincere love.

To the man, my precious gift from God, to whom I owe my life, my success, and all my respect: my dear father.

To the woman who suffered without letting me suffer, who never said no to my demands, and who spared no effort to make me happy: my adorable mother.

To my dear sister, who has never ceased to advise, encourage, and support me throughout my studies. May God protect her and grant her luck and happiness.

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Thank you from the bottom of my heart

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List of abbreviations

Abbreviation	Significance
IFRS/IAS	International Financial Reporting Standards/ International Accounting Standards
AICPA	American Institute of Certified Public Accountants.
AAA	American Accounting Association
NTIC	Nouvelles Technologies de l'Information et de la Communication
IT	Information Technology
ERP	Enterprise Resource Planning
SME	Small and Medium Enterprises
PGI	Progiciel de Gestion Intégré
OCR	Optical Character Recognition
IASB	International Accounting Software Board
HM Revenue and Customs	Her Majesty's Revenue and Customs
PCG	Plan Comptable Générale
PCN	Parent Country Nationals
FAS	Financial Accounting System
NAP	National Accounting Plan
NAC	National Accounting Council
ISA	International Standards on Auditing
IFAC	International Federation of Accountants
IASCA	International Arab Society of Certified Accountants
NOEA	The National Order of Expert Accountants
NCCA	The National Chamber of Commissioners of Accounts
NOCA	The National Organization of Certified Accountants
GAFA	Google, Apple, Facebook, Amazon
CRM	Customer Relationship Management
AI	Artificielle Intelligence
CDO	Chief Digital Officer
DMP	Data Management Platform

Abstract

Since the advent of digital technology, numerous tools have emerged that radically change various professional fields. A review of the literature and theory shows that new technologies are increasingly impacting organizations, and no organization can escape the changes brought about by technological progress. Based on these observations, our thesis seeks to highlight the effects of digitalization on the liberal accounting profession.

For this purpose, we conducted a training at B&B Audit and Advisory Firm in, through which we managed to observe and analyze in detail the methodologies and workflow that this firm follows.

This work reveals that in addition to redefining the profession itself, technological advancement must also lead to the acquisition of new skills by accountants. Additionally, it highlights the challenging issues that must be overcome by the development of this profession in this digital age. It is from this basis that this paper looks into digitalization to bring about the transformation of the accounting profession and the related skill set which each professional has to possess to succeed.

Keywords: Accounting, Liberal accounting, digitalization, skills, challenges, , accounting professionals.

Résumé

Depuis l'avènement de la technologie numérique, de nombreux outils ont émergé, changeant radicalement divers domaines professionnels. Une revue de la littérature et des théories montre que les nouvelles technologies impactent de plus en plus les organisations, et aucune organisation ne peut échapper aux changements induits par le progrès technologique. À partir de ces observations, notre thèse cherche à mettre la lumière sur les effets de la numérisation sur la profession comptable libérale.

À cette fin, nous avons effectuées une formation chez B&B cabinet d'audit et conseil en Algérie, à travers laquelle nous avons réussi à observer et analyser en détail les méthodologies et le flux de travail suivis par cette entreprise.

Ce travail révèle qu'en plus de redéfinir la profession elle-même, l'avancement technologique doit également conduire à l'acquisition de nouvelles compétences par les comptables. De plus, il met en évidence les défis importants qui doivent être relevés pour le développement de cette profession à l'ère de la digitalisation. C'est sur cette base que cet article examine la digitalisation afin de provoquer la transformation de la profession comptable et l'ensemble de compétences nécessaires que chaque professionnel doit posséder pour réussir.

Mots-clés : Comptabilité, comptabilité libérale, digitalisation, compétences, défis, professionnels de la comptabilité.

المخلص

منذ ظهور التكنولوجيا الرقمية، ظهرت العديد من الأدوات التي غيرت بشكل جذري مختلف المجالات المهنية. تُظهر الدراسات والنظريات أن التقنيات الجديدة تؤثر بشكل متزايد على المنظمات، ولا يمكن لأي منظمة الهروب من التغييرات الناتجة عن التقدم التكنولوجي. بناءً على هذه الملاحظات، تهدف أطروحتنا إلى تسليط الضوء على آثار الرقمنة على مهنة المحاسبة الحرة.

لهذا الغرض، قمنا بإجراء تدريب في مكتب للتدقيق B&B والاستشارات في الجزائر من خلاله تمكنا من مراقبة وتحليل منهجيات وسير العمل الذي يتبعه هذا المكتب بالتفصيل.

يكشف هذا العمل أنه بالإضافة إلى إعادة تعريف المهنة نفسها، يجب أن يؤدي التقدم التكنولوجي أيضًا إلى اكتساب المحاسبين لمهارات جديدة. علاوة على ذلك، يسلط الضوء على التحديات الكبيرة التي يجب مواجهتها لتطوير هذه المهنة في عصر الرقمنة. على هذا الأساس، تفحص هذه المذكرة التحديات والفرص المتاحة لإحداث تحول في مهنة المحاسبة، وتحدد المهارات الضرورية التي يجب أن يمتلكها كل محترف لتحقيق النجاح في هذا المجال.

الكلمات المفتاحية: المحاسبة، المحاسبة الحرة، الرقمنة، المهارات، التحديات، محترفي المحاسبة

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**Part 01: The impact of digitalization on
liberal accounting profession.**

General introduction

General introduction

Historically, accountants have played a crucial role in business management and company governance. Through their activities, accountants have shaped the financial performance of organizations. Over time, the accounting profession has faced various fluctuations but has consistently proven its importance and value.

The role of accountants is no longer limited to simply recording accounting transactions, as much of this routine business work is now managed by information technology. Instead, accountants have become important strategic elements within organizational structures. They oversee performance analysis and develop effective strategies.

With the advent of digitalization, accounting professionals are presented with new perspectives and possibilities. The integration of technology into accounting processes allows for increased efficiency and accuracy in financial reporting and analysis.

However, digitalization also brings challenges that need to be addressed. Accountants must adapt their skills to keep up with changing technologies and ensure they can effectively utilize digital tools for tasks such as data management and analysis.

❖ Reasons for Choosing the research theme:

We selected this topic for professional and personal interest, aiming to explore the impact of digitalization on the liberal accounting profession. This choice aligns well with the current trend and seamlessly integrates with our project idea SimpleX, a software designed to streamline work organization within firms.

The choice of this thesis topic was motivated by several reasons. First, digitalization is a major challenge for many companies and sectors of activity, including the financial accounting system. It is therefore relevant to study how this digitalization is impacting the liberal accounting profession. In particular, this subject has generated strong interest from many researchers and professionals in the field who have explored the relationship between liberal accounting and digital technology from different perspectives.

This includes the advantages of this technology for the profession, as well as the threats and negative effects that may arise. Some have even addressed the issue of adapting to this new culture. This shows that this subject is not yet fully understood and will be the subject of much debate and scientific research.

❖ Research Study overview:

Based on the points discussed in this introduction and our research work, our goal will be to closely monitor the influence of digitalization on the liberal accounting profession. Therefore, the title of our end-of-cycle dissertation is the following:

“The impact of digitalization on the liberal accounting profession”

General introduction

To further understand our research study, we asked the following research question:

How has the accounting profession been improved by digitalization?

To further understand this research question, we asked the next secondary questions:

1. What are the most commonly used digitalization tools in accounting firms to minimize routine tasks and ensure accurate, relevant, and quick financial reporting?
2. What new skills do accountants need to possess in the era of digitalization?
3. What limitations have hindered the development of accounting practices with regards to digitalization?

To answer the previous preoccupations, we have put the following hypothesis:

- 1- Digital technologies make it possible to improve the quality of accounting profession”.
- 2- Accountants must be up-to-date with the latest digitalization trends in order to be able to continue to practice their profession effectively.
- 3- the Algerian finance law would be the only obstacle to the evolution of the accounting profession.

❖ Methodology of research:

In the context of this thesis, we have chosen to use the descriptive analysis method to concretely illustrate the theoretical concepts essential to understanding the case study. This approach is based on objective observations and data collected from questionnaire respondents, as well as our analysis. The goal is to provide a detailed description of the key technologies that have a significant impact on the liberal accounting profession, and to examine in detail how these technologies influence the evolution of this profession.

Our approach will consist of analyzing and describing precisely the functionalities and implications of these technologies in accounting practice. To conduct our study, we used the following research tools:

- **The main written sources:** we used basically academic sources as Books, Scientific journals, Research papers, Thesis.
- **Participant observation:** this methodology allowed us to immerse ourselves directly in the context studied, to observe and actively participate in the activities and interactions of the research subjects, within the B&B Algeria firm. This offered us an in-depth and contextual perspective, allowing us to collect rich and detailed data, obtain first-hand information, and understand the nuances and social dynamics that can be difficult to grasp through other data collection methods.
- **A walkthrough interview:** It offers a means to approach the understanding of complex matters in a multifaceted way. Giving an opportunity for in-depth exploration, it allows

General introduction

participants to make their actions and decisions clear and meaningful. Such comprehensive understanding, enriched by contextual information shared during interviews, enables the identification of gaps and possibilities for improvement within processes or systems. Moreover, the collaborative essence of walkthrough interviews means that there is mutual exchange involved in the process, leading to real-time feedback and iterative refinement of proposed solutions. Such an iterative process not only adds to the validity of findings but also fosters a deeper understanding of the subject. Walkthrough interviews are an active instrument for data collection, collaboration, and further decision-making

- **Questionnaires** according to a quantitative approach: they are essential for collecting in-depth and specific quantitative data from participants, and for exploring their perceptions, experiences, and knowledge in depth. We developed a questionnaire to obtain rich and detailed data, which can provide valuable insights for the analysis and understanding of our research topic.

❖ **Work plan:**

We divided our research in two parts:

The first part deals with the impact of digitalization on liberal accounting profession:

The first chapter will address, in its first section, the definitions and general concepts of the liberal accounting profession. The second section will cover various aspects of digitalization.

The second chapter will be divided into two sections: the first will focus on a case study, presenting the intern company, the audit and accounting firm B&B, and conducting a descriptive analysis of the tools used by the firm. The second section will delve into the analysis of the questionnaire, discuss the results obtained, offer recommendations.

The second part presents our project SimpleX which was divided into seven axes:

Presentation of SimpleX , Innovation aspects , Market research , Production and organization plan , Users behaviour analysis , The financial feasibility , Prototyping .

Chapter 01: The Liberal accounting profession and digitalization

Introduction

The liberal independence of the accounting profession stands at a crossroads between autonomy and expertise within the broader context of financial management. In Algeria, for instance, independent accountants are seen as pillars of professional integrity, providing a wide range of accounting and advisory services without direct organizational affiliations.

This thesis focuses on accounting practices and the profession, especially in light of the advent of digitalization. The first part discusses the fundamental concepts of accounting, tracing its historical development and exploring its objectives and core principles. It then shifts to the financial accounting system in Algeria, analyzing its structure, evolution, and the legislative framework governing it. Additionally, we evaluate the current state of the liberal accounting profession by outlining the professional landscape and relevant organizations.

Building on this foundation, the second part addresses digitalization, its conceptual framework, objectives, and implications. We explore how digitalization is transforming companies and professions, including the accounting field in Algeria. This includes an investigation of digital tools, strategies for successful digital transitions, and the future trajectory of the accounting profession amidst technological advancements.

By linking these two sections, the thesis aims to provide a comprehensive understanding of both traditional accounting practices and the evolving landscape shaped by digitalization.

Section 01: The Accounting Profession

This memory section, explore the fundamental concepts of the accounting profession, such as the accounting equation, principles, the accrual basis, and the accounting cycle. It also examines the financial accounting system in Algeria, which has undergone significant changes in recent years to align with the International Financial Reporting Standards (IFRS).

Finally, we will discuss the current state and challenges of the accounting profession in Algeria, as well as the role and missions of the professional accountants in the country.

1. Fundamental Concepts of Accounting:

1.1. Definition of Accounting:

Accounting can be defined as the science and art of accurately recording all business transactions that result in the transfer of money or money's worth in books of accounts. It can also be defined as the art of recording mercantile transactions in a regular and systematic manner, keeping accounts in such a way that one can determine the correct result of business activities at the end of a given period. Additionally, accounting allows individuals to know the true state of their business and properties by inspecting their books.

Accounting has been defined as:

"The art of recording, classifying and summarizing in a significant manner in terms of money, transactions and events which are, in part at least, of financial character, and interpreting the results thereof." This definition has been given by the American Institute of Certified Public Accountants (AICPA).

American Accounting Association (AAA):

AAA defines "Accounting refers to the process of identifying, measuring and communicating economic information to permit informed judgment and decisions by users of the information."

A.W. Johnson:

"Accounting may be defined as the collection, compilation and systematic recording of business transactions in terms of money, the preparation of financial reports, the analysis and interpretation of these reports and the use of these reports for the information and guidance of management."

Weygandt, Kieso and Kimmel: *"Accounting is an information system that identifies records and communicates the economic events of an organization to interested users."*¹

¹Dr. Nisikant Jha, 2014, *Introduction of financial accounting, first edition, Published by Himalaya Publishing House, unit 01 p 1 & 2.*

Chapter 01: The Liberal accounting profession and digitalization

We could define accounting as an information system that identifies and records financial transactions, determines the results, and provides information to various users according to their needs. Essentially, accounting is not just about recording; it is a tool that provides information to help users make better decisions.

1.2. Historical overview of general accounting:

Four periods in the evolution of general accounting over the centuries can be distinguished.

From Antiquity to the 13th century:

Accounting was present since ancient times, first among the Egyptians, then among the Greeks and the Romans. The writings were passed on clay or papyrus tablets by administrators who kept the accounts of the areas they managed, bankers who recorded the amounts withdrawn or deposited, merchants who registered the commercial documents. This period is characterized by the practice of rudimentary accounting in part simple recording cash transactions and receivables and debts. This type of accounting was used during the Middle Ages without any advances until the end of the 13th century.

14th and 15th centuries:

Accounting took its modern form in Italy in the late Middle Ages and early Renaissance. This period is characterized by the appearance of both commitment and partly double accounting.

Thus, as a result of the crusades, and then travels resulting from the great discoveries (Americas), credit operations (purchase and sale) grow. In order to record these debts and claims, accounts of third parties (suppliers, customers, government... etc.) appear in the accounts. These accounts appeared for the first time at Genoa in 1340.

At the same time, double-part accounting is introduced. The Italian Franciscan monk Luca Pacioli vulgarized the method of the double part in 1494 in "The Treaty of Accounts and Scriptures", chapter of the book "Treatment of Arithmetic, Geometry, Proportions and Proportionality".

The invention of printing will allow the dissemination of modern accounting techniques used first by Italian merchants.

16th century to 1980:

Starting in the 16th century with the development of capitalism, the use of double-engagement accounting spread throughout the world. In addition, the development of synthesis documents began to develop from the 19th century, giving general accounting its present form. With the Introduction of the Commercial Code, accounting books can be admitted by the judge as evidence between merchants for trade deeds. The compulsory books are then the journal and

the inventory book. Since the late 1930s, accounting standardization processes have been implemented in different European countries, and since the early 1970s, an international approach to accounting harmonization has been under way (IAS/IFRS standards).

From 1980 to the present:

This period is characterized, at the level of the accounting function, by the massive use of information technology (IT) and the increasing use of new information and communication technologies (NTIC).

Computerization enables the production of accounting documents and the conduct of controls to be automated. Since the early 1980s and the spread of the personal computer, the computerization of business accounting has become more common, first with software specific to general accounting, then with Enterprise Resource Planning (ERP). The latter were first used by large companies, then by SMEs.

An ERP or Integrated Management Software (PGI) is a software that consists of several modules, each corresponding to a function of the enterprise.

An ERP is based on a single database, which eliminates the need to enter identical data multiple times. It connects the general accounting function to other functions within the company, generating time savings in the overall management of the enterprise. It can also automatically produce certain accounting records.

Starting in the mid-1990s, new digitization technologies (such as scanners with OCR software and digital cameras) enabled the digitization and dematerialization of supporting accounting documents. Coupled with the development of the Internet and mobile telephony, this promotes the outsourcing of the accounting function.²

1.3. Branches of Accounting:

In this section, we will be focusing our attention on the two main recognized and significant branches of accounting, which are widely acknowledged and hold great importance in the field, these branches are:

1.3.1. Financial accounting:

It involves reporting past information to external users, such as shareholders, managers, lenders, and tax authorities. Companies are required to produce annual reports and accounts, these accounts help managers, owners, lenders, and advisers to make decisions about providing resources, such as buying, selling, or holding equity and debt instruments. Although, the International Accounting Standards Board (IASB) primarily focuses on financial information

²Laurent Spang, 2023, *Comptabilité générale, édition ellipses, paris*, p 8.

needs of investors, lenders, and creditors, but it also acknowledges that other users may find general purpose financial reports useful. These reports are provided through three key statements: the statement of financial position, the income statement, and the statement of cash flows. Other users may include employees, Customers, Governments, and the public. Common questions users of financial reports ask include ethical and environmental concerns, financial stability, and cash availability. Investors, employees, lenders, suppliers, customers, and the public all have concerns about the company's reputation and financial stability.

1.3.2. Cost and management accounting:

Cost and management accounting is concerned with reporting accounting and cost information to users within an organization. As the name suggests, management accounting information is used to help managers to manage the business and its activities. Cost and management accountants are first concerned with the costs that go into producing products and services to determine a selling price for those products and services that will generate a profit for the business. Management accounting information is then used to plan levels of production and activity in the future as well as deciding what products to produce and sell to maximize profits for the business. As well as planning what the business is going to do, management accounting produces reports to evaluate the results of past plans to see whether they achieved their aims and the ways in which improvements could be made. While financial accounting reports what has happened in the past, management accounting is very much concerned with both the present and the future and how accounting information can be used for short-term decision making and longer-term planning ³.

1.4. Objectives of Accounting:

Accounting is essential for every business, providing a systematic framework for recording, analyzing, and reporting financial transactions. It plays a pivotal role in ensuring transparency, accountability, and informed decision-making within organizations. Before delving into its specific objectives, it's crucial to understand the fundamental importance of accounting in driving business success.

- ❖ **To record and control business transactions:** Accounting systems must record cash inflows and outflows, as well as the assets and liabilities of a business, to safeguard assets and efficiently generate wealth, as shown in Figure 1. Controls should ensure accurate payments, timely debt settlements, and protection of assets against fraud and

³Peter Scott ,2018, *Introduction to Accounting*, Published Oxford University Press, p14-18.

misappropriation. An effective system maintains up-to-date records of non-current assets, which are regularly reviewed.

Figure 1: accounting system.



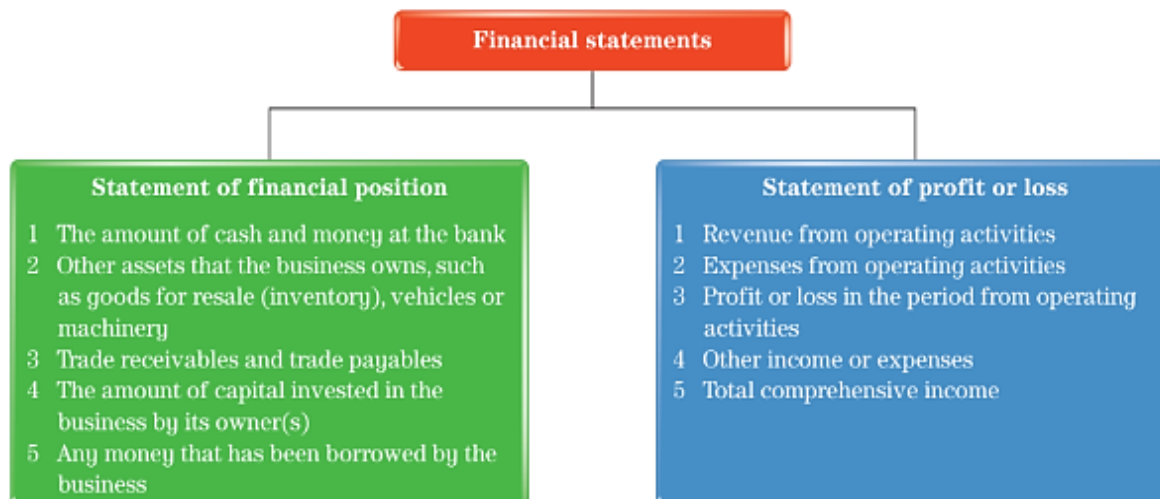
Accounting systems should keep a record of the following:

Source: Andrew. T& Anne. M, Introduction to Financial Accounting.

- ❖ **To maintain accuracy in recording:** Companies need to keep accurate transaction records, while individual merchants or partnerships may not. HM Revenue and Customs (Her Majesty's Revenue and Customs) requires accurate financial statements and accounting for income tax. Failure to comply can cause problems;
- ❖ **To meet the requirements of the law:** Companies must maintain accurate transaction records, while lone merchants or partnerships are not. HM Revenue and Customs (Her Majesty's Revenue and Customs) requires financial statements and accurate accounting for income tax due, and failure to do so can hinder discharge.
- ❖ **To present final financial statements to the owners of the business:** Modern financial statements aim to present stewardship objectives by evaluating management's stewardship function. Stewardship accounting involves management reporting on resource usage, while accountability involves presenting an account of resource use.⁴

⁴Andrew Thomas&Anne Marie Ward ,2019,Introduction to Financial Accounting 9 e ,McGraw Hill, p 5.

Figure 2 : summary of information that is in the financial statements.



Source: Andrew. T& Anne. M, Introduction to Financial Accounting.

- ❖ **To present other financial reports and analyses:** Annual reports include financial statements, operating reviews, directors' statements, chairman's statements, remuneration reports, and corporate social responsibility reports. These components allow engage with stakeholders.
- ❖ **To facilitate the efficient allocation of resources:** Accounting assists in resource allocation, facilitating economic decision-making. Annual reports help investors to identify efficient companies, while employees make informed decisions additionally, Accounting provides data for planning, management, and decision-making in production, marketing, investment, and financing.⁵

1.5. Accounting process:

Accounting involves the systematic detection, measurement, and documentation of financial transactions in books of account, with information classified, grouped, and summarized for ease of use.

- ❖ **Identifying transactions and events:** The initial stage of accounting involves documenting financial transactions, such as money, products, or services, based on internal policies or external requirements.
- ❖ **Measuring:** Involves expressing the monetary worth of business transactions and occurrences.
- ❖ **Recording:** This involves systematically documenting identifiable and quantifiable transactions and occurrences in the books of original entry, following accounting standards.

⁵ *Ibid.*

- ❖ **Classifying:** This process involves grouping comparable transactions in original entry books into relevant headings by posting or transfer entries.
- ❖ **Summarizing:** This job involves condensing transactions and preparing financial statements such as income statements, balance sheets, statement of financial status, and cash flow statements.
- ❖ **Analyzing:** This involves establishing relationships between elements in an income statement or balance sheet. The objective is to discover the enterprise's financial strengths and shortcomings.
- ❖ **Interpreting:** Accountants should interpret statements to assist users in making informed decisions about a business's profitability and financial status, explaining events, reasons, and potential outcomes.
- ❖ **Communication:** The Accounting Information System presents analyzed and interpreted financial reports and statements to users, including profit and loss accounts, balance sheets, cash flow statements, and auditor reports.⁶

1.6. Fundamental accountability principles in Algeria:

Yearly accounts serve as the foundation for keeping accounts and are prepared using basic principles. They can also be referred to as accounting records or the presentation of yearly accounts.

Article 6 of Law 07-11 of November 25, 2007, which addresses accounting standards, must be followed in order for transactions to be accurately and promptly recorded.

⁶Dr. Nisikant Jha ;Op.cit; p04

Table 1 : Fundamental accountability principales.

Principal & convention	Definitions and scope
Entity Convention	The entity is considered to be autonomous and separate from the person(s) participating in its equity. Its financial statements take into account only the effect of its own transactions and only events that affect it.
Historical Cost (nominalism)	The amount of cash paid or fair value of a given counterpart to acquire an asset, at the date of its acquisition or production. The amount of proceeds received in exchange for the obligation or the amount of cash expected to be paid to quench the liability at the normal price of the business.
Operation Continuity	The normal situation of the entity according to which it is presumed to have neither the intention nor the need to cessation or significant reduction of its activities in the foreseeable future.
Exercise (or commitment) accounting	The effects of transactions and other events are recorded on the date of the occurrence of such transaction or event.
Exercise independence (separation)	The outcome of each exercise is independent of the preceding one and the subsequent one. For its determination, it is therefore appropriate to attribute to it the transactions and events that are its own and only those.
Faithful Image (Good Information)	A purpose to which, by their nature and qualities and in compliance with accounting rules, the financial statements of the entity are able to provide relevant information on the financial position and performance and change in the financial situation of the Entity.
Caution	Consideration of a reasonable degree of caution in the exercise of judgments necessary to prepare estimates in uncertain conditions, so that assets or proceeds are not overvalued and liabilities and expenses are not undervalued.
Intangibility of the opening balance sheet	The opening account (at 01/01/N) must necessarily reflect the closing account data (N-1), as approved, certified, approved and published. Any change resulting from corrections of fundamental errors or estimates, changes in accounting methods or regulations shall have an impact on equity, as indicated in the annex.

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Neutrality	Accounting information must be neutral; it must not be the subject of bias or lead to trending data and predetermined results.
Intelligibility (or clarity)	Quality of information when it is easily understood by any user who has a reasonable knowledge of business and economic activities and accounting and is willing to study the information in a reasonably diligent manner.
Sincerity	Not explicitly stated in the SCF, this quality results from the provisions of the Commercial Code. It has a relationship with the means to be used to the true image on the basis of the reality of the facts, their materiality and meaningful importance.
Reasonable Cost	Relationship Cost/benefit: the cost of financial and accounting information must be below the benefits that such information is intended to provide or produce.

Source : Abdelaziz HATTAB,2010, Plan comptable ; CABINET D'AUDIT COMPTABLE & d'ingénierie financière normalisé Selon le Système Comptable Financier Loi 07 – 11 du 25 Novembre 2007, chambre de commerce & d'industrie du RHUMEL -C.C.I.R, Constantine p4&5.

2. Financial Accounting System:

2.1. Financial Accounting System and Accounting Standards:⁷

The correlation between accounting systems and financial reporting quality is well-established. Accounting Systems offer benefits in processing and presenting accounting information.

- Accounting standards guide the selection and application of accounting policies, handling estimates, and rectifying errors;
- Current Accounting practices challenge long-standing conventions, such as the entity convention and the money measurement convention;
- The Financial Accounting System impacts various private sectors, including Banks, Insurance, real estate, Agriculture, and Institutions required to conduct perpetual inventory;
- The system emphasizes the establishment and regulation of accounting practices, the Code of Accounts, and the registration of transactions;
- It does not cover interim financial information, share-based payments, or sector-specific information;
- The system does not specify procedures for dealing with unrealized assets and liabilities, which IAS (International Accounting Standards) addresses through Standard 37.

2.2. The financial accounting system in Algeria:

2.2.1. Evolution of accounting system in Algeria:

Algeria's Financial Accounting System has evolved over time, incorporating changes in the country's legal and economic environment, global influences, and foreign investments. Since 1962, Algeria has used various accounting frameworks, including the French general accounting plan (PCG) and normalized accounting plan (PCN). The Algerian financial accounting system (FAS), a combination of French and IASB rules, was created in 2010:

- A transitional period post-independence in 1962, maintaining the French General Accounting Scheme until the introduction of Algeria's National Accounting Scheme in 1975;
- The implementation phase of the national accounting scheme from 1976, criticized for its alignment with the socialist economic model until the late 1980s;

⁷BachiriAfaf, 2023, *The financial accounting system in Algeria after a decade of use: Reality, challenges and opportunities*, *Journal of Economics and Finance in Business (JEFB)*, Volume 08, Number 01,p953&954.

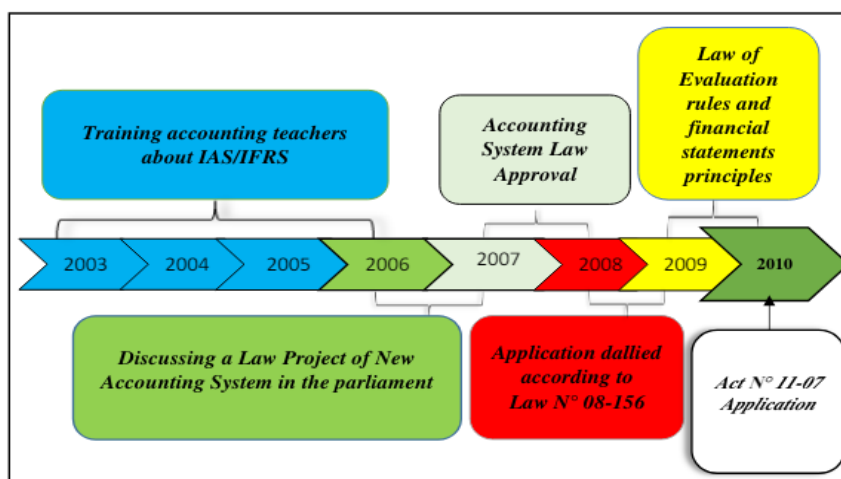
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- The period of economic transformation from a socialist to a market-oriented economy, addressing deficiencies in the national accounting scheme from 1988 to 1998;
- The review phase of the Algerian accounting system from 1998 to the establishment of the FAS in 2007, aiming to align with international standards. Despite efforts to enhance transparency through legal frameworks in 1999, the focus shifted towards providing investor-centric information rather than solely legal compliance;⁸

Following the introduction of the Financial Accounting System in 2007, Algeria has seen a flurry of legislative measures, resolutions, and practical guidelines issued by the Ministry of Finance and the National Accounting Council to regulate and enhance the financial accounting.

So, the figure below describes the Accounting Reform Process in Algeria:

Figure 3: Accounting Reform Project in Algeria.



Source: Abdelhalim Miliani, 2022, Accounting Reform in Algeria under International Accounting Standards IAS/IFRS.

2.2.2. Definition of the Algerian Financial Accounting System:

The Algerian Financial Accounting System can be defined as a structured plan comprising a series of procedures and steps within the realm of accounting. It facilitates the execution of key accounting functions such as inventory management, recording, classification, and summarization of financial transactions to generate financial statements. The primary aim is to ensure that accounting objectives are met effectively.

Furthermore, the accounting system encompasses the processes of recording and categorizing transactions, designing relevant documentation, and establishing protocols for handling various financial information within the accounting unit. This includes methods for recording transactions, implementing controls, and presenting the outcomes. It serves as a

⁸ *Ibid* 949.

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comprehensive framework that guides the execution of accounting tasks, encompassing analysis, recording, tabulation, and classification of operations, as well as outlining procedures for collecting financial data within the organization.

According to the Algerian FAS (Act N°11-07, 2007), it is described as ‘*a system designed to organize financial data in a manner that enables users to gather, classify, evaluate, record essential statistical information, and present accurate financial statements reflecting the financial position, asset base, performance, and cash position of a corporate entity at the conclusion of a fiscal period*’.

The Algerian FAS aims to revolutionize traditional accounting practices in Algeria by establishing a new conceptual framework aligned with international accounting standards and financial reporting principles. By implementing a standardized chart of accounts and enhancing the comparability and readability of financial statements, the system caters to a diverse range of users and provides a transparent depiction of an entity's financial standing. This approach not only benefits local stakeholders but also facilitates accessibility for foreign investors and multinational corporations operating in Algeria.

The FAS is mandated for both Natural and Legal entities as stipulated by regulatory requirements.

Specifically excludes Legal Entities adhering to public accounting regulations. According to Article 4 of the Act N°11-07, 2007, the scope of application of this law encompasses the following entities:

- Companies governed by Commercial Law;
- Cooperatives;
- Natural or Legal entities engaged in the production of Commercial or Non-Commercial Goods and Service.

Furthermore, Article 5 of the same legislation specifies that Small and Medium Enterprises (SMEs) as defined by law have the option to adopt a Simplified Accounting approach.⁹

2.2.3. Legislations Pertaining to the Financial Accounting System

Since the inception of the financial accounting system, a series of laws have been established outlining guidelines, principles, evaluation methods, and regulatory frameworks. The key legislations are detailed below:

⁹Abdelhalim Miliani, 2022, *Accounting Reform in Algeria under International Accounting Standards IAS/IFRS; Doctoral Degree in Finance and Accounting Sciences; university of djilali liabess sidi bel abbes*, p80.

- ❖ **Act N° 11-07 dated November 25th, 2007, concerning The Financial Accounting System:** This law is crafted to delineate the Algerian Financial Accounting System, known as financial accounting. It specifies the conditions and scope of its application to all types of entities, be it personal or legal. The law mandates that accountability within enterprises must uphold credibility, transparency, regularity, and oversight over the information process. Notably, it officially discontinues the use of the previous accounting system "NAP." Significant provisions of this law include the establishment of a new conceptual framework for accounting in Algeria. It introduced the concept of consolidated accounts for the first time and transformed the perception of accounting from merely a tax imposition tool. The implementation of this financial accounting system was postponed until the beginning of 2010.
- ❖ **Executive Decree 156-08 dated May 26th, 2008, regarding the application of the FAS:** This decree outlines the procedures for implementing specific articles of Act 11-07 and comprises 44 articles addressing nine main topics.
- ❖ **Executive Decree 110-09 dated April 07th, 2009, concerning conditions and modalities for conducting accounting through automated media systems:** This decree establishes the regulations for maintaining accounting records through Automated Media Systems. It elaborates on Article 24 of the Financial Accounting System Law across 26 articles, defining the concept of Automated Media Systems and the prerequisites for their operation, including effective internal control mechanisms.
- ❖ **Ministerial Decision N° 71 dated July 26th, 2008, pertaining to evaluation rules, accounting practices, financial statements, accounts code, and operational guidelines:** This decision, signed by the Minister of Finance and published in The Algerian Official Journal on March 25th, 2009, delineates evaluation principles, financial statements, accounts codes, and operational guidelines. It comprises three appendices covering general principles, financial statements, accounts codes and operational procedures, and simplified financial accounting. Additionally, it includes a glossary of 99 accounting terms with detailed explanations.
- ❖ **Ministerial Decision N° 72 dated July 6th, 2008, concerning the limitations on the number of businesses, users, and activities for small entities to uphold simplified accounting:** This decision, comprising three articles, establishes the thresholds allowing entities to adhere to Financial Accounting rules and specifies the nature of activities permissible.

- ❖ **National Accounting Council Opinions:** The National Accounting Council (NAC) issues opinions that provide solutions to accounting challenges encountered in daily practices. These opinions offer clarity on complex operations and aid accountants in navigating intricate accounting scenarios. According to NAC (2021), there are 16 such opinions.
- ❖ **Other Relevant Laws and Legislations:** In addition to the aforementioned references related to the Financial Accounting System, several laws and legislations.¹⁰

3. The Liberal Accounting Profession in Algeria:

3.1. The Current state of the Liberal Accounting Profession in Algeria:

The regulation of the accounting profession in Algeria dates back to 1971 with the enactment of Order No. 713 82, issued on December 29, 1971. This order, published in the Republic's Official Gazette; focused on certified accountants and auditors, while the role of chief accountants in public institutions fell under the jurisdiction of the General Inspectorate of Finance. It established the Higher Council of Accountancy, overseen by the Ministry of Finance, tasked with developing the national accounting plan and supervising certified accountants and auditors. The Council, led by a Ministry of Finance representative, held the authority to grant accreditations for practicing the profession.

In the early 1990s, recognizing the need for reforms in the accounting profession, a series of legal texts were introduced to address legislative and regulatory gaps. A significant milestone was the implementation of Executive Law No. 11 in 1991, consolidating certified accountants, chief accountants, and auditors into a unified entity—the "National Organization of Certified Accountants, Chief Accountants, and Auditors."

Algeria has undergone accounting reforms in recent years, driven by its transition to a market economy and adoption of international accounting standards. These reforms not only focused on the accounting system but also aimed at restructuring and regulating the accounting profession in the country. Several legal texts were issued to address challenges faced by the profession, such as:

- ❖ **Professional Qualification Deficiency:** Algerian accountants lack a comprehensive training policy to meet international professional standards like (IFRS) and (ISA).
- ❖ **Competitive Pressures:** Foreign accounting expertise entering the Algerian market through international firms poses challenges for local accountants, experts, and auditors who have limited resources and capabilities.

¹⁰ *Ibid pp88-95.*

- ❖ **Lack of Regulatory Responsiveness:** The profession's professional organization struggles to fulfill its duties and contribute to the reform process due to its weak influence within the Algerian accounting landscape. Factors contributing to this include weak professional structures, limited engagement with international bodies like the International Federation of Accountants (IFAC) and the International Arab Society of Certified Accountants (IASCA), and a strained relationship with the National Council of Accountants.¹¹

3.2. Liberal Accounting profession environment in Algeria:

Forming an opinion on the accounting environment in Algeria necessitates a deep dive into its intricacies and a thorough understanding of its various components and their interplay with the ongoing Accounting Reform Process from a technical standpoint. The inception of the Financial Accounting System in Algeria was met with a myriad of challenges,

- ❖ **Mapping the Liberal Accounting Professionals in Algeria:**

The realm of accounting professionals in Algeria is delineated into three distinct categories: Expert Accountants, Commissioners of Accounts, and Certified Accountants. The Algerian authorities repealed the former legislation (Act No. 08-91, 1991) governing the practice of accounting within the country and introduced a comprehensive replacement in the form of (Act No. 10-01, 2010). This shift was prompted by several deficiencies observed within the accounting profession, encapsulated as follows:

- Inadequacies in the previous regulatory framework governing the accounting profession in Algeria;
- Heightened competition faced by Algerian accountants from highly skilled foreign counterparts;
- Imperative to elevate the Algerian accounting profession to align with international standards and bodies;
- Lack of comprehensive understanding of international accounting standards among many Algerian accounting professionals due to the absence of a structured training policy.

Consequently, Act No. 10-01 was promulgated in the Algerian Official Journal, heralding a fresh perspective aimed at modernizing the accounting profession in Algeria in light of global economic shifts and the implementation of the Algerian Financial Accounting System. This legislation, pertaining to the professions of Expert Accountant, Commissioner of Accounts

¹¹Benhammou Fayza & Lefkir Nerjes, 2024, *Future Prospects for the Accounting Profession in Algeria*, *Journal of Studies in Economics and Management*, Volume 06 Number 02, pp323-324.

(Statutory Auditor), and Certified Accountant, encompasses multiple chapters addressing the practice of accounting.

The oversight bodies governing the accounting profession in Algeria have a longstanding history predating the accounting reform process, tracing back to the inception of the National Accounting Plan (NAP) in the early 1990s. In a bid to revamp the accounting profession, Algerian legislators enacted a series of laws pertaining to the National Accounting Council, as well as the professions of Expert Accountants, Commissioners of Accounts, and Certified Accountants, to instill greater organization within the profession.

It is worth noting that the issuance of (Executive Decree No. 11-28, 2011) introduced councils for Expert Accountants, the National Chamber of Commissioners of Accounts, and the National Organization of Certified Accountants alongside (Act No. 10-01, 2010). This reform initiative significantly curtailed the influence of previous professional organizations on accounting practices, placing them under the direct purview of the Ministry of Finance, thereby compromising their autonomy a departure from the principles advocated by IAS/IFRS.¹²

3.3. Accounting Organizations:¹³

The oversight bodies governing the accounting profession in Algeria have been in existence since the (NAP) in the early 1990s, predating the accounting reform initiatives. In an effort to streamline the profession, Algerian lawmakers introduced a series of laws pertaining to the National Accounting Council and the roles of Expert Accountants, Commissioners of Accounts, and Certified Accountants. These measures aimed to enhance the structure and governance of the profession. The key organizations involved in this process are outlined below:

3.3.1. The National Accounting Council:

Established by Executive Decree No. 96-318 in 1996, the National Accounting Council (NAC) is described in Article 02 of the same law as a consultative body with a dual ministerial and professional mandate. Its primary responsibility is to coordinate and consolidate research in the field of accounting standards and their practical applications.

❖ **Structure of the NAC:** Among its various functions, the National Accounting Council is tasked with developing the current Financial Accounting System. In 2010, the council underwent restructuring in accordance with Article 04 of Act No. 10-01, placing it under the oversight of the Ministry of Finance. The NAC comprises five committees, namely:

✓ Approval Committee;

¹² Mohammed Kameli, 2022, *Accounting Reform Process in Algeria: Lessons and Challenges*; الملتقى الدولي الاول حول: واقع تطبيق المحاسبة، الجبابة ومراقبة التسيير في المؤسسات الاقتصادية.

¹³ (Abdelhalim Miliani) ; *Op.cit* p 116-119.

- ✓ Formation Committee;
 - ✓ Disciplinary and Arbitration Committee;
 - ✓ Quality Control Committee;
 - ✓ Committee for the Standardization of Accounting Practices and Professional Duties;
- ❖ **NAC missions in Algeria:**
- ✓ Supervising Approvals Granting
 - ✓ Receives applications for approval and registration in the National Standard for Accounting Experts, National Chamber of Commissioners accountants, and National Organization of Certified Accountants.
 - ✓ Assesses qualifications of all candidates wishing to register and be accredited.
 - ✓ Prepares and publishes a list of approved professionals periodically.
 - ✓ Receives disciplinary complaints against accounting professionals and judges their cases.
 - ✓ Accomplishes professional serious care.
 - ✓ Receives and studies draft ethics laws and submits them for approval.
- ❖ **Accounting Normalization:**
- ✓ Collects, exploits, and teaches accounting information.
 - ✓ Works on the development and use of accounting tools.
 - ✓ Suggests procedures for normalizing accounting practices in Algeria.
 - ✓ Studies draft laws related to accounting and expresses opinion.
 - ✓ Contributes to the development of training systems and programs.
 - ✓ Follows up and ensures Quality Control of all related to the development of accounting techniques and International Auditing Standards.
 - ✓ Monitors the development of standards and tools related to accounting at the international level.
 - ✓ Accompanying Accounting Profession in Algeria:
 - ✓ Contributes to the promotion of the accounting profession;
 - ✓ Ensures accounting care;
 - ✓ Conducts studies in accounting and similar fields;
 - ✓ Assists training institutions in accounting;
 - ✓ Organizes workshops if new accounting rules are released.

3.3.2. Professional Organizations:¹⁴

In accordance with Act No. 91-08 of 1991, the National Organization of Accounting Experts, Commissioners of Accounts, and Certified Accountants was established in 1991 to oversee the accounting profession exclusively for 20 years. However, due to identified shortcomings in its legal operations, authorities decided to review the legislative framework to reform and promote the accounting profession in Algeria through Act No. 10-01 of 2010, which pertains to the professions of expert accountants, commissioners of accounts, and certified accountants.

❖ **The National Order of Expert Accountants (NOEA):** This is a professional body with legal recognition, comprising competent individuals and entities authorized to practice accounting as outlined in Act No. 10-01 of 2010. The National Council of the NOEA is elected and has the option to establish Regional Offices. It includes a representative from the Ministry of Finance to collaborate and align with the Minister of Finance. The duties of the National Order of Accounting Experts, as per Executive Decree No. 11-25 of 2011, involve the election of a nine-member National Council by the General Assembly from the accredited members listed in the National Order of Accounting Experts (Executive Decree N° 11-25, 2011), here are the following:

- ✓ Contribute to the organization of the Algerian accounting profession;
- ✓ Protect the dignity and independence of members of the National Order;
- ✓ Ensure compliance with Algerian accounting rules;
- ✓ Develop internal rules and ethics code for the profession;
- ✓ Sharing perspectives on accounting issues;
- ✓ Coordinating with governmental authorities;
- ✓ Representing the profession's interests in international and national organizations.

The National Council of the National Order of Expert Accountants is made up of nine members elected by the General Assembly from among the authorized and registered members of the National Order List of Accounting Experts. Members of the National Assembly are elected for terms of three years, which can be renewed.

❖ **The National Chamber of Commissioners of Accounts (NCCA):** Is another professional body with legal standing, comprising competent individuals and entities authorized to practice accounting as specified in Act No. 10-01 of 2010. The National Council of the NCCA, as per Executive Decree No. 11-26 of 2011, consists of nine

¹⁴ *Ibid pp 119-122.*

members elected by the General Assembly from the accredited members listed in the National Chamber of Commissioners of Accounts, serving a term of three years, renewable.

- ✓ Manage the National Chamber of Accounts' properties;
- ✓ Collect professional offerings as determined by the General Assembly;
- ✓ Contribute to accounting research and publication;
- ✓ Organize training forums for the profession;
- ✓ Represent the Chamber in public authorities and international organizations;
- ✓ Develop internal rules.

The National Council of the National Chamber of Commissioners of Accounts (Executive Decree N° 11-26, 2011) consists of nine members elected by the General Assembly from authorized and registered members on the National Chamber List of Accountants. Members of the National Assembly are elected for a time of three years, renewable.

❖ **The National Organization of Certified Accountants (NOCA):** Is a professional body with legal recognition, comprising competent individuals and entities authorized to practice accounting in accordance with Act No. 10-01 of 2010. The duties of the NOCA, outlined in Article 04 of Executive Decree No. 11-27 of 2011, include defining the composition of the National Council of the National Organization of Certified Accountants, its powers, rules, and operational procedures Here are the following:

- ✓ Responsible for managing the National Organization of Certified Accountants' properties;
- ✓ Collecting professional offerings as determined by the Chamber's General Assembly;
- ✓ Contributing to accounting research and publishing results;
- ✓ Organizing training forums for the profession;
- ✓ Representing the Chamber in public authorities and international organizations;
- ✓ Preparing the organization's interns.

3.4. Profile of liberal Accounting Professionals:

The cadre of accounting professionals in Algeria constitutes a relatively small cohort compared to the extensive array of economic enterprises and companies operating within the country's economic landscape. With over a million enterprises in need of proficient accounting services, the number of accounting practitioners in Algeria is notably scarce, as illustrated in the ensuing table:

Table 2 : Number of Accounting Practitioners up to 31/12/2023.

Profession	Natural person	Person moral	Total	Ratio
Accounting expert	333	10	343	5.58%
Account Commissioner	2933	17	2950	47.95%
Certified Accountant	2853	6	2859	46.47%
TOTAL			6152	100 %

Source: Created by Researchers collecting information from NAC 2024.

3.4.1. Certified Accountant:

❖ **Definition of Certified Accountant:** under Law 10.01 The accountant is generally defined as the person qualified to record, compile and summarize operations and events of a financial nature and to prepare financial lists explaining the results of such operations and events. Article 41 of Act No. 10.01 defines the accredited accountant as: "*A professional who is normally exercised in his own name and under his own responsibility is responsible for the maintenance, opening and control of the accounts and accounts of dealers, companies or organizations that request his services.*"

❖ **Tasks of certified accountant approved under Law 10.01:** A certified accountant's profession of independent occupation, where he is not directly subject to power, but owns his own office, which he is. Direct accountant, who has a contractual relationship with his clients who use his services, and the accredited accountant, in accordance with Law 10-01, exercises a range of tasks that can be explained as follows:¹⁵

Table 3 : missions of the certified accountant.

Tasks	Explanation	Articles
Accounting maintenance.	<ul style="list-style-type: none"> ▪ Recording accounting entries in the journal. ▪ Presenting the evolution of the merchant's or company's asset elements 	Articles 41-42
Tax file management and quasi-fiscal	<ul style="list-style-type: none"> ▪ Preparing all social declarations (social contributions) tax declarations, 	Article 43

¹⁵ لمحمد بوشوشة ، 2022 ،قراءة في تنظيم مهنة المحاسب المعتمد في الجزائر في إطار القانون 10-01،مجلة أداء المؤسسات الجزائرية ،المجلد 11 ، العدد 1،جامعة قاصدي مرباح – ورقلة -الجزائر صفحة 174-175

	administrative accounting documents entrusted to them.	
Customer assistance	<ul style="list-style-type: none"> ▪ Assisting the customer in preparing financial statements. ▪ Assisting the customer with various departments 	Article 4

Source: Translation from Arabic , established by the researchers , based on the article of M. Boushousha , source mentioned in reference number 15.

3.4.2. Account Commissioner:

- ❖ **Definition of Account Commissioner:** The concept of the auditor derives from the Latin word audit, i.e., where the auditor listened at the plenary meeting at which the accounts were read out loud and committed to reporting, but he became known as the forensic observer audit legal for permanently legitimate tasks and for providing a true picture of the financial and accounting position of the body entrusted with its control. It is also called the professional (*le professionnel de chiffres*) for its specialization in accounting and finance and its acquisition of expertise. It is called the legal guard (*le gardien du droit*) because it is not limited to the control of accounts, the protection of the controlling entity, the fulfilment of the public interest and the prevention of risks. He is defined by BENYAMINE Paul as "*an independent and competent professional who gives an opinion on the regularity and integrity of the annual accounts to express the position of the company and the results of its activity based on the laws and customs of the company concerned*".

HOWARD F Stetler defines ‘*it as anyone who exercises the audit and reconciles it with accounting principles and expresses the true position without neglecting the economic and social character of the enterprise*’. Usually, the auditor knows what he's doing, so he's the professional who monitors the regularity of the accounts and presents a true picture of them.¹⁶

It is also known as: "*Any person who, on his own behalf and under his own responsibility, proves the authenticity and validity of the accounts of the enterprises, shall continue to practice this profession.*"

¹⁶ حفيزة مركب، النظام القانوني لمحافظ الحسابات في الجزائر، أطروحة لنيل شهادة دكتوراه علوم في القانون الخاص، جامعة الجزائر إكلية الحقوق، 2017-2018، صفحة 35.

According to article 715 bis 4 of the Algerian Commercial Code, "*a person who investigates the company's books and securities and controls the regularity and validity of the company's accounts, investigates the accuracy of the information provided in the report of the Board of Directors and in the documents sent to outside parties on the company's financial position and accounts, approves the regularity of the inventory and the balance and its validity, and checks with the Governor whether the principle of equality of shareholders is respected.*"

❖ **missions of Account Commissioner:** The functions of the Auditor may be divided into permanent and special functions:

- **Permanent missions:** The permanent functions of the Auditor, without any interference in the conduct of the accounts, are as follows:
 - Certification of the validity and regularity of the company ' s annual accounts and the fact that they give a true picture of the financial situation;
 - The company ' s property at the end of last year;
 - To verify the validity of the annual accounts and their conformity with the information set out in the management report submitted by the facilitators to the shareholders, partners or shareholders;
 - Respect for the principle of equality of shareholders;
 - Prevention of difficulties encountered by companies in the scope of the warning procedure;
 - Issuance of certificates and reports on the various events that the company may experience;
 - In the event that the company prepares the accounts supported, the auditor also certify that the accounts supported corrected on the basis of accounting documents or reports of the auditors of the companies in which the company holds shares. In accordance with the provisions of the law governing the occupation of the governorate of accounts in Algeria, the following reports are prepared by the Registrar of Accounts;
 - A report which contains a reservation or no reservation to the regularity and validity of the annual documents and, if necessary, the rejection of a legally justified certificate;
 - Report on the certification of subsidized or consolidated accounts where appropriate;

- ✓ Special report on organized conventions;
 - ✓ Special report on the details of the highest five awards;
 - ✓ Special report on special privileges granted to users;
 - ✓ Special report on the evolution of the outcome of the last five years and the outcome by stock or social share;
 - ✓ Special report on internal control procedures;
 - ✓ special report if a possible determination of continued exploitation is noted.
- **Special missions:** In addition to previous permanent functions, the Comptroller performs other special or temporary functions, which may be summarized as follows:
 - The company's decision to increase or reduce capital;
 - Establishment of investment certificates, right to vote certificates and issuance of movable values;
 - Project of integration, separation, conversion or liquidation of the company;
 - Notify the General Assembly of all irregularities he has discovered;
 - Call the General Assembly in case of mismanagement of the board of directors and notification of the criminal facts to the public prosecutor. ¹⁷

3.4.3. Accounting expert:

- ❖ **Definition:** According to Act No. 10-01, the performance of the expert's profession is assigned to persons exercising that profession, either as natural persons or as legal persons.
- **Natural persons:** According to Act No. 10.01 entrusts the performance of the expert's profession to the expert accountants. the Act is clear in its description of the functions of the profession, thus making it easier to distinguish them from any other profession similar to that of the accredited accountant and the auditor.

An accounting expert shall be deemed to be any person who, in his or her own name and under his or her responsibility, exercises the task of organizing, examining, evaluating and analyzing the accounting and various types of accounts of organizations and bodies in cases provided for by law and entrusted to him or her contractually with the expertise of the accounts. the expert accountant also holds,

¹⁷حدادي سارة، دور محافظ الحسابات في اكتشاف الممارسات الحسابية الإبداعية والحد من اثارها على جودة المعلومات المالية، أطروحة لنيل دكتوراه بنوك ومحاسبة، جامعة محمد بوضياف، المسيلة، 2019، صفحة 76-78

concentrates, opens, controls, controls and assembles the accountability of institutions and bodies with which he does not have an employment contract.

- **Legal entities:** According to Act No. 10.01 on the occupation of the expert accountant, the governor of accounts and the approved accountant, companies of accounting expertise are the legal persons responsible for the performance of the professional expert accountant in Algeria, where the expert accountant may form stock companies, limited liability companies, civil companies or groups of mutual benefit, whether private or public economic, for the purpose of exercising their individual professions.¹⁸
- ❖ **The missions of the accounting expert:** It establishes a standard format for five different types of missions, the first four steps conclude with the submission of a standardized attestation to the client, which is a report in which the accountant expresses their opinion

Table 4: the missions of the accountant expert.

Type of mission	Activities performed	Issued attestation
Compilation mission	<ul style="list-style-type: none"> • Gathering information about the company; • Designing a chart of accounts and organizational procedures; • Quality control of accounting records; • Determining end-of-year accounting entries. • Checking the consistency and reliability of the annual accounts. 	Negative assurance attestation the accountant did not identify any elements that call into question the consistency and reliability of the annual accounts
Limited review mission	<ul style="list-style-type: none"> • Gathering information about the company; • Understanding the procedures related to the accounting function; • Implementing control techniques (gathering evidence): document checks, reconciliations, interviews, analytical review; • Determining end-of-year accounting entries. 	Issuance of negative assurance attestation: The accountant did not identify any elements leading him to consider that the annual accounts are not prepared in accordance with the applicable accounting standards
Audit mission	<ul style="list-style-type: none"> • Gathering information about the company; • Assessment of internal control procedures; 	Positive assurance attestation The accountant certifies that the annual

¹⁸ دقادي عبد القادر، 2020، واقع مهنة الخبير المحاسبي في ظل الاصلاح المحاسبي في الجزائر، المجلة المغربية للاقتصاد والمناجمنت، المجلد 7، العدد 1، صفحة 90-91

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	<ul style="list-style-type: none">• Implementation of audit techniques.	accounts are accurate and sincere.
Other assurance missions	<ul style="list-style-type: none">• Limited review or audit techniques.	Special attestations (examples: prospective information, internal control).
Missions without expression of assurance	<ul style="list-style-type: none">• Techniques adapted to the type of mission.	Report without expression of assurance (examples: compilation of accounts, review of information based on agreed-upon procedures...),

Source : Chichi Selma & Riad Meriem ,2022, L'expert-comptable, conseiller de maitrise de risques fiscaux dans les entreprises Algériennes, Journal of Contemporary Business and Economic Studies, Vol. (05), No. (1), pp 684-686.

The accounting profession is a vital and dynamic field that serves the needs of various stakeholders in the economy. Accounting principles and standards are the foundation of the accounting practice, as they provide the rules and guidelines for preparing and presenting financial information.

Section 02: The digitalization in accounting field.

The increasing presence of digitalization in our daily lives means that digital technology is widespread in everyone's life, not just the younger generation. In this section, we will approach into the concepts of digitalization and its impact on businesses, with a particular focus on the accounting profession, and its future in light of current transformations and developments.

1. Fundamental concepts of digitalization:

1.1. The digital revolution:

The digital revolution refers to the transition from mechanical and analogue electronic technology to digital electronics for storing, transferring, and utilizing information. This shift is considered the starting point of the digital revolution and began in the second half of the 20th century with the widespread adoption of digital computers and digital storage of information.

This led to the development of more advanced computer systems capable of digitally replicating and automating mathematical calculations that were previously performed manually.

The reason the digital revolution is now considered as a revolution is that digital technology is always evolving, spreading, and boosting productivity in a wide range of fields and businesses. Specific events have led to the widespread adoption of digital technologies, forever changing the way we exchange and use information and marking the beginning of the information age.

By the 1950s and 1960s, many governments, militaries, and organizations were already using computers to manage complex data and functions. Scientists began considering time-sharing between computer users and the possibility of achieving this over wide area networks. The internet's concepts were introduced when a message was sent over the ARPANET (Advanced Research Projects Agency Network) in 1969, and further software development enabled remote login, file transfer, and email.

Furthermore, the advancement of digital data compression technology played a crucial role in the digital revolution, serving as the foundation for numerous digital media compression standards since the late 1980s. Enhanced performance and cost reductions facilitated the widespread embrace and integration of digital technologies, permeating various types of equipment and consumer goods.

The 1980s saw the rise in popularity of digital technology, with the introduction of automated teller machines (ATMs), industrial robots, electronic music, video games, computer-

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generated images in film and television, home computers, the first mobile phone in 1983, and the first digital camera in 1988.

The emergence of the World Wide Web in 1989 represented a significant milestone in the digital revolution. Tim Berners-Lee's innovative approach involved creating a standardized set of communication protocols between systems, followed by the establishment of an information storage server and the development of browser software. This software allowed users to access and interact with various internet resources, leading to the public accessibility of the World Wide Web.

Subsequent enhancements to the web's usability led to a rapid increase in internet users. Businesses were quick to recognize the potential of connecting computers and other digital devices to the internet, unlocking new capabilities and transforming communication and information exchange. By 1996, the internet had become deeply ingrained in mass culture, with numerous businesses establishing websites to reach a broader audience.¹⁹

Table 5: The outline of the progression from computerization to digitalization.

The year	Events
The 1980s	the era of microcomputing and client/server infrastructures.
The 1990s	the era of the "Web" or World Wide Web "www," which, according to the _" Le Robert dictionary" represents "a set of data linked by hypertext links on the internet.
The 2000s	the era of digital in the sense of mastering data in a logic of transport and transfer flow
The 2010s	the era of digital in the sense of portable computer technology that enables new uses and brings new data to manage
The 2016s	High-speed multimedia networks (fiber optics, low-orbit satellites); development of web/TV, interactive media and videos; customization of interfaces (voice recognition, handwriting, facial recognition); advancements in artificial intelligence, blockchain, and chatbots

Source: Created by researchers collecting information from the internet.

1.2. Conceptual framework of the notion of digitalization:

Digitalization refers to the broader process of transforming and integrating digital technology into all aspects of society, including processes, operations, business models, and human interactions. This involves using digital technologies to automate, simplify, and improve existing processes, as well as to create new products, services, and experiences.

¹⁹<https://courses.minnalearn.com/en/courses/digital-revolution/the-digital-revolution/what-is-the-digital-revolution> Consulted on (13/03/2024 10:43).

Digitalization is a profound change that affects many areas, such as businesses, public administration, education, health, media, transportation, etc. It accelerates operations, optimizes resources, strengthens communication and collaboration, and enhances the user experience.

Digitalization can take different forms, such as the use of software, applications, online services, cloud computing, connected devices, artificial intelligence, and data analytics.

A profound digital transformation is required in order to make activities more effective, adaptable, agile, and suited to the demands and expectations of users in the digital age, indeed, creating a website or investing in social networks is no longer sufficient; action must be taken within the organization.

Digitalization is often compared to the industrial revolution as they have in common the fact that they are revolutionary, essential, and both leave behind organizations that do not adopt them.²⁰

1.3. The distinction between digital transformation, digitalization, and digitization

- ❖ **The definition of digitization and digital transformation:** Many people do not distinguish between digitization, digitalization, and digital transformation, often using these terms interchangeably. Before we explore their differences and similarities, we will define digitization and digital transformation, just as we previously defined digitalization.
 - **Digital transformation:** according to a (Stolterman & Fors, 2004), "*Digital transformation is the change caused or affected by digital technology in all aspects of human life.*" Similarly, for Bowersox, Closs, and Drayer (2005), "*digital transformation is the process of reinventing a business to digitize its operations and develop extended relationships in the supply chain.*" The limit of digital transformation for companies is to revitalize those that have fully leveraged information technologies in their supply chain.²¹
 - **Digitization:** is the process of converting physical items into digital forms, such as scanning a paper document into a PDF file. It involves transforming non-digital objects into digital representations for use by computer systems. Contrastingly, digitization involves implementing digital technologies like hardware or software devices. Information and communication technology systems support digital technologies by standardizing information for quick coding, storing, and transmitting

²⁰ Abosson Koll A.& Nneme L, (2023,comprendre ladifférence entre la transformation digitale et la digitalisation , revue de la littérature pour un éclairage scientifique , Volume,4 Numéro, 4 ,P670.

²¹HILMI, Y. (2023). "Le contrôle de gestion à l'ère des nouvelles technologies et de la transformation digitale; Revue Française d'Économie et de Gestion; volume 4, Numéro4, pp. 8-9.

vast amounts of data. additionally, it extends beyond scanning files; it encompasses preserving digitized documents for future accessibility. Originally a technical matter, digitization is now a strategic management concern that enhances effectiveness, competitiveness, and cost-efficiency without altering existing business processes²² .

❖ The difference between digitization, digitalization and digital transformation:

• Digitization:

- Digitization is the process of converting physical items or analog data into digital formats. This includes scanning paper documents, converting audio or video recordings into digital files, or digitizing images;
- Its primary focus is on the conversion of non-digital objects or information into digital representations that can be stored, manipulated, and transmitted electronically;
- Digitization is often the initial step towards creating digital assets that can be utilized by computerized systems for various purposes;
- While scanning files and converting them into digital formats is a common example of digitization, its scope extends beyond this to include preserving digitized documents for future access and use.

• Digitalization:

- Digitalization builds upon digitization and refers to the broader process of integrating digital technologies into various aspects of business operations and processes;
- It involves the implementation of digital technologies, systems, and processes to organize, manage, and utilize digitized data and assets effectively;
- In the context of organizations, digitalization entails putting digitized documents and data into a usable system or platform. This often involves creating digital workflows, automating processes, and enhancing accessibility and usability;
- Digitalization is particularly important for small and medium-sized enterprises (SMEs), as it enables them to establish digital relationships with customers, suppliers, and employees, thereby enhancing efficiency and competitiveness.

²²HASAN, M. (2022). "Digitalization, Digitization, and Digital Transformation of SME Business in Bangladesh." *Master's Thesis, university of south -Eastern Norway* ; pp. 7.

- **Digital Transformation:**

- Digital transformation represents a more comprehensive and strategic approach to leveraging digital technologies to drive fundamental changes in business models, processes, and organizational culture;
- It involves the realignment or reinvention of an organization's technology, operations, and strategies to thrive in a rapidly evolving digital landscape;
- Digital transformation encompasses not only the adoption of digital technologies but also the rethinking of products, services, customer experiences, and business models to capitalize on digital opportunities;
- It requires a holistic approach that spans across all aspects of the organization, including technology, people, processes, and culture. This often involves breaking down silos, fostering innovation, and embracing agility and adaptability;
- Digital transformation is driven by the recognition that digital technologies have the potential to fundamentally reshape industries, disrupt traditional business models, and create new opportunities for growth and innovation.²³

In summary, while digitization focuses on converting physical items into digital formats, digitalization involves putting digitized data into usable systems, and digital transformation entails leveraging digital technologies to drive fundamental changes in business models and operations for competitive advantage and growth.

Table 6: Representation of the difference between digitization, digitalization and digital transformation.

Concept	Author	Definition
Digitization	Yoo et al. (2010).	A less comprehensive change than digitalization, it is associated with significant changes related to sociotechnical structures.
Digitalization	Hylving and Schultze (2013). Yoo et al. (2010).	It involves more than just a technical process (like digitization), but it does not necessarily lead to a reconfiguration of strategy or profound changes in business conduct.
Digital transformation	Bharadwaj et al. (2013). Fitzgerald and Kruschwitz (2013)	Major organizational changes induced by digital technologies and, consequently, profound modifications in strategy and business conduct.

Source : OUIDA, C, (2023), Transformation digitale de la profession comptable à l'ère du COVID-19

²³*Ibid* 8.

1.4. Objectives of the digitalization ²⁴:

Digitalization has several objectives:

- ❖ **Transformation strategy based on economic intelligence:** "*Internet makes economic intelligence both more accessible and more complex,*" warns Christelle Urvoy. Because even though we have access to much more information, it is important to know how to search for it properly, not to be buried under too much data, and above all to verify it. For example, many business leaders have limited social media practices, with poorly adapted profiles that do not follow influencers, etc. Indeed, this is a double-edged tool, as the internet helps us access a greater amount of data in a much shorter time than usual, it is important to ensure the reliability and accuracy of this data;
- ❖ **Placing customers at the heart of the company's concerns:** Digitalization provides customers with several digital tools that allow access to knowledge at all times. In the private sector, companies tend to address the end customer through these tools in order to understand what the customer thinks. Interactions between the company and the customer also enable the design of new products, making new offers, and conducting surveys on the reception of a new service;
- ❖ **Facilitating transactions with customers:** According to Galeries Lafayette, a customer who purchases through both channels (physical and digital) buys more than a single-channel customer. Indeed, customers from the physical network would not buy less in-store but more online if they had the opportunity. Conversely, for digital customers who come to the store. Being available on both channels helps facilitate the purchasing process and increase sales;
- ❖ **Improving practices and decision-making processes:** Digitalization impacts all areas of an organization, not just the marketing or communication department. It has an impact on four axes:
 - **Strategy:** the impact that digitalization will have on the organization's services will automatically impact its strategy. Since it will need to improve it or adopt a completely new strategy that is adapted to the organization's operations;
 - **Organization:** Digitalization has a direct impact on the organization since once the entity's service modifications are made, the organization will change.;

²⁴Ait lemqeddem Hamid2020, *French Journal of Economics and Management* , 5,*The role of digitalization in the effectiveness of internal audit*,Volume 1,Number 5, p 53-55.

- **Technology:** the impact of digitalization on technology involves the evolution of platforms and tools to accelerate and enable transformation;
 - **Organizational culture:** it will be necessary to start implementing a "digital vision" within the entity's culture;
- ❖ **Eliminating the boundary between the real and the virtual:** Nowadays, it is difficult to separate the real from the virtual, as the uses in these two worlds are often confused because they involve the same terrains and objects for research. According to Stimler and Vial, digitalization means that the two spheres, virtual and real, are constantly co-constructed and create a fundamentally unique substance. This is what is called "digital monism», Eliminating the boundary between the two spheres allows for better coordination of activities on both sides.

1.5. Advantages and disadvantages of digitalization:

Digitalization, like any phenomenon, has both positive and negative aspects, in this title, we will explore the advantages and disadvantages of digitalization to provide a comprehensive view of its implications.

❖ **Advantages:**

- Instantaneous sharing of information (via cloud services like OneDrive) without any geographical limitations;
- Information that has been dematerialized, allowing for a wider reach to a larger audience;
- Optimizing time in organizing business management through the execution of redundant tasks via digitalization;
- Restrict errors due to repetitive tasks,
- Immediate, clear, and transparent communication;
- Enhanced profitability through optimization of the company's costs and performance;
- Cutting down on traditional advertising expenses and the option to target specific audiences through digital communication (social media);
- A better understanding of its customer base through the collected data;
- Working in a network on the same project thanks to online deployment via the cloud or OneDrive, etc;
- Optimization of the offer proposed to customers following the needs collected via digital marketing;

- Reduction of storage costs because dematerialization allows unlimited information storage;
- Democratization of digitalization, allowing anyone to launch a business with just a computer (e-commerce, etc);
- Improved customer experience.

❖ Disadvantages

- Numerous impostors provide digitalization services despite their lack of experience;
- Insufficient human engagement in digital transformation leads to a lack of interest in enterprise digitalization;
- Some information is accessible to everyone, it is important to be cautious about what is written as it remains on the internet;
- Private life and professional life are no longer distinct, with machines running constantly and smartphones accelerating this lack of differentiation;
- Difficulty in learning for individuals unaccustomed to digitalization. This can lead to resistance and lower productivity in the workplace.²⁵

1.6. Digitalization During the Covid-19 Era:

The current Covid-19 crisis, which limits physical contact, has pushed all types of companies, from small to large, to greatly increase their use of digital technology. This change is happening in every industry and department, requiring adjustments in technology, organization, and rules.

This crisis has sped up the need to use digital processes. During long periods of lockdown, business leaders, employees, and regular people have had to find new ways to meet their daily needs by using digital solutions, like creating remote work platforms, customer apps, and e-commerce.

It's important to understand that this crisis has significantly sped up digital transformation in (table 7). Some companies that were unsure about using digital technology have been forced to work remotely and completely change how they operate in a short time²⁶.

²⁵Alexey B 2021, *l'impact de la digitalisation sur une entreprise ,master en sales management en alternance , HEC école de gestion de l'université de liège ,p 33-34 .*

²⁶Benazzou, L. & Bennia, N., 2021, *Covid-19 et contrôle de gestion ,Revue du Contrôle de la Comptabilité et de l'Audit, Volume 5, numéro3,p 76.*

Table 7: Digital transformation pre-COVID-19 vs during COVID-19.

pré-COVID-19	COVID-19: accelerating effects
Optional adoption of video conferencing and online meeting platforms.	Necessity to transition to remote work and increasingly become a "paperless organization.
Broader shift from paper-based processes, procedures, and routines to electronic ones within organizations.	Accelerated replacement of paper-based processes, procedures, and routines with electronic ones.
Financial pressures to transition to remote work and a "paperless organization."	Mandatory shift for companies to operate online rather than in person.

Source : Benazzou, L. & Bennia, N.,2021, Covid-19 et contrôle de gestion, Revue du Contrôle de la Comptabilité et de l'Audit.

Based on this final table, we can conclude that using and adopting digital tools has become a necessity rather than merely a choice.

2. Digitalization and transformation of companies and professions:

2.1. The digitalization in Algeria:

The digital transformation process in Algeria saw a significant boost in 2022 with the introduction of the government portal for public services and the investor platform. These initiatives align with one of the 54 commitments made by President TEBBOUNE Abdelmadjid, aiming to accelerate digital transition by promoting widespread use of information and communication technologies, particularly in public administrations, and enhancing economic sector governance. The government portal, which encompasses over 300 digitized public services from 29 ministerial departments, provides comprehensive information on electronic and non-electronic government procedures and services, catering to citizens, individuals, and professionals. This underscores the high priority given to digitization by the country's leadership, with the objective of simplifying tasks for citizens and reducing the need to search for digitized public services across multiple official websites or sectoral portals.

Additionally, the launch of the digital investor platforms, which have attracted significant interest from investors, aims to strengthen and prioritize the economic sector. These platforms facilitate the guidance, support, and monitoring of investments, as well as streamlining the process of creating businesses and investments, promoting contacts between investors and the economic administration, and ensuring transparent procedures. The successful implementation of these digital platforms was made possible through the concerted efforts of public authorities in developing telecommunications infrastructure, including significant investments in

connection to high-speed international networks and the expansion of fixed and mobile internet capacities.

Algeria has significantly increased its international bandwidth capacity to 7.8 Terabits per second, compared to 2.8 Tb/s in 2021 and 1.5 Tb/s in 2020, creating an ideal environment to advance the national digitization program. This expansion has been complemented by increased speeds of up to 300 Megabits, particularly for residential use, enhancing service quality and connectivity for all users²⁷.

Based on the above-mentioned discussions, we can say that digitization in Algeria has become an urgent necessity. This is essential for improving the performance of governments and institutions, enhancing the well-being of individuals and communities, and serving as a means to promote interaction and transparency in the relationships between society and its institutions. Therefore, digital transformation is not merely a process involving technological, economic, social, cultural, and political mechanisms, but rather a fusion of these elements. This transformation requires the development of a national digital strategy, the provision of necessary and sufficient institutional conditions and infrastructure, national digital sovereignty, effective interaction between institutions, academic and educational environments, as well as between the state and citizens, and a reconsideration of organizational work.

In order to avoid falling behind, which is now known as the digital gap and its negative consequences on development, it is imperative to introduce deep and comprehensive reforms in the management aspects of public affairs, and this can only be successful by targeting and developing information and communication technologies in all sectors.

2.2. The company at the heart of digitalization:

Given that digitalization is not a passing phenomenon affecting virtually all sectors, companies must adapt to the changes caused by it. According to the economist Theodore Levitt: "*The future belongs to those who see the possibilities before they become obvious,*" as was the case with the GAFA (Google, Apple, Facebook, Amazon). Nowadays, digital technology plays a very important role in our daily lives, everything is getting faster, we are connected from morning to night, and more than 50% of our communication goes through the internet. In this regard, digital innovations have led to the progression of the needs and habits of individuals, whether at a personal or professional level. However, digital is no longer necessarily a means to ensure relationships with customers, but it is at the heart of:

²⁷<https://www.aps.dz/sante-science-technologie/149551-2022-annee-de-l-acceleration-de-la-numerisation-en-algerie> consulted on (28/03/2024 17.44)

- ✓ The company's strategy;
- ✓ Its work processes;
- ✓ Its business plans.

The motivations driving leaders to undertake a digital transformation process extend beyond a simple desire for modernization. According to a study jointly conducted by the Massachusetts Institute of Technology (MIT) and Capgemini Consulting (a digital service company), companies are currently facing three (03) pressures that compel them to embark on a digital transformation process:

- ✓ Pressure from the company's customers;
- ✓ Pressure from competitors;
- ✓ Pressure from employees.

On one hand, the adoption of technologies by customers encourages or even necessitates the company to undergo digital transformation to remain in the market and meet the increasingly demanding needs of its customers, as the saying goes: "*The customer is king.*" According to Joël Gueguen (a computer engineer within a service company), the method of digitization often involves experimenting, measuring, and continuously improving products and services while considering user feedback.

On the other hand, traditional companies have been confronting the emergence of fully digital companies in recent years, which have proven to be formidable competitors. These companies have successfully established a strong connection with their customers through their online presence and a high level of responsiveness in decision-making. Therefore, to avoid the obsolescence of their products, services and the loss of market share, these non-modernized

companies must embark on their digital transformation to enhance their turnover and remain competitive in a rapidly changing world²⁸

2.2.1. Tools of digitalization in a company:

In this title we will explore the most popular numerical tools now used by businesses and how they may be used to maximize their potential and create new opportunities for growth and success

- ❖ **Collaborative suites: an essential companion:** Digital transformation requires collaborative suites such as Google G Suite and Microsoft Office 365. By incorporating different tools such as Gmail, Docs, Drive and Teams, they offer a complete solution to

²⁸SAHOUI, N., & SAIB, G. (2019). "Digitalisation des opérations comptables et impact sur les procédures d'audit légal." *Mémoire master 2 audit et contrôle de gestion, université mouloud mammeri tizi ouzou faculte des sciences économiques, commerciales et des sciences de gestion*, p42.

effectively manage all the digital aspects of your business, which facilitates adaptation to big data. These suites allow for higher mobility, offering access to all the information needed for smooth communication and a successful transition to an online work environment.

❖ **Communication platforms: optimizing work organization:** Digital communication tools, such as Slack, Microsoft Teams, Skype, or Google Meet, are important components of work organization optimization.

They provide the option to form groups specifically for each task, facilitating more centralized and reliable communication than with traditional e-mails.

These platforms promote active participation from team members, making it easier to share information, solve issues, and communicate with one another.

These tools are a perfect fit for the new forms of work organization in the increasingly digitalized professional world. They facilitate effective cooperation even with geographically dispersed colleagues and encourage remote contact.

❖ **Project management tools: efficient coordination and cooperation:** The centralization of projects is just as important for efficient organization and time savings as communication. It appears that the project management tool is crucial for fostering teamwork. It enables the creation, scheduling, and real-time tracking of each project's progress. The instantaneous information provided to the intervenors reinforces their effectiveness and responsiveness. Internal communication is made easier via parametrizable mail alerts and direct document sharing. Jira, Monday, Atlassian, Asana, and Trello are some of the most valuable tools; they guarantee complete coverage whenever they are used.

❖ **CRM tools: A global perspective to increase your sales:** Customer Relationship Management (CRM) software, such as Salesforce, Veeva, Zoho, Hubspot, and Zendesk, provides a global view of the customer through digital platforms integrated with dashboards. These essential tools offer the ability to collect and analyze information, design digital marketing strategies, anticipate customer expectations, and ensure effective communication with quality after-sales service. In these CRMs, the integration of artificial intelligence improves customer understanding, which allows for an improved user experience in a context of fierce competition²⁹.

²⁹<https://banana-content.com/blog/outils-digitaux-indispensables-entreprise/> consulted on 11/03/2024 (14.30)

2.2.2. Approach to Successful digital transformation of companies:

The process of digital transformation goes beyond simply digitizing the company; it entails reshaping the company's operations in a digital and interconnected world:

- ✓ Business Model;
 - ✓ Customer Experience;
 - ✓ Organization.
- ❖ **Rethinking the Business Model:** Digital transformation disrupts the very core of how companies operate, starting with their business model. For "pre-digital" companies, the fundamental question posed by digital transformation is how to generate revenue and profit in a digital world. Continuing with business activities based on outdated business models, organizations, and distribution methods from the last century is unlikely to sustain profitability in the long run. Start-ups are inherently digital and naturally think "Digital first," adapting and modifying their organization in real time or nearly so. They continuously adjust their offerings, learn from customer behavior, and even change their business model along the way to discover a more effective one.
- ❖ **Adapting the Customer Experience:** The customer experience serves as the second driver of digital transformation, aiming to satisfy customers through a deeper understanding facilitated by digital means (tracking, geolocation, etc.). The collection and analysis of data are fundamental for understanding customers, providing a crucial starting point for enhancing the product, brand, and the relationship the company maintains with the consumer. Tools such as "web analytics" and "big data," including the processing of often "unstructured" data, are pivotal for digital marketing. This leads to increasingly personalized marketing, striving to make the customer journey as seamless as possible. It is essential to consider the various touchpoints of the consumer with the brand, product, or service, from mobile to the physical store, through social media. The challenge of digital marketing lies in providing a cross-channel approach for this digital and mobile customer.
- ❖ **Reimagining the Organization:** The reflection on digital transformation should first focus on the prior analysis of digital maturity, examining it point by point. Integrating digital aspects into every dimension and service of the company is the essential concern that should guide its leaders. This is often led by the Chief Digital Officer (CDO), whose role primarily involves developing and implementing the overall digital strategy, supporting managers and teams, defining key performance indicators, and implementing a measurement plan. Within the management committee, the CDO's role is also to assess how digital impacts what "makes" the company and to address the fundamental questions

that build it, such as what it sells, how it sells, how it sources, how it manufactures, to whom it sells, and how it organizes and manages itself, among others.³⁰

2.3. The risks of digitization:

Despite the crucial importance of digitization for the competitiveness and innovation of businesses, it also presents inherent risks, often referred to as digital risks. These surprising and unforeseen outcomes can result from various factors associated with the integration and use of digital technologies:

- ❖ **Strategic Risks:** Linked to the strategic choices implemented, which may lead to a dependency on certain services/products/applications, as well as a risk of cannibalization of different media, or non-compatibility;
- ❖ **Marketing Risks:** In the case of presence on social networks or the creation of a website, these platforms are vulnerable to cyber-attacks. This also leads to increased competition, as customers are no longer necessarily obliged to choose a fiduciary near their place of work or residence to submit their documents or for meetings, as everything can be done online.
- ❖ **Ethical and Legal Risks:** It is essential to ensure that accounting applications and other services capable of generating reports or declarations are constantly in line with the evolving accounting rules and legislation.
- ❖ **Security Risks:** In the realm of data protection, we identify threats:
 - ✓ Related to confidentiality in the event of disclosure of financial information to unauthorized individuals;
 - ✓ Related to integrity in the case of inappropriate modification of financial information;
 - ✓ Related to availability in the case of inaccessible financial information (interruptions, software bugs); loss of information;
- ❖ **Rigidity Risks:** These may include, for example, a risk of social exclusion, with the elderly who struggle to keep up with or understand new technologies. Additionally, rigidity can arise from digital illiteracy, challenges in using new tools, lack of awareness of these tools, or the costs associated with them.
- ❖ **Risks specific to dematerialization:** Dematerialization paradoxically leads to a reduction in communication, as most exchanges occur via email or remotely, leading to a decrease in face-to-face interviews and meetings. Customers also expect immediate responses, and

³⁰Lahchame Kasmia , Djilali Chafik ;(2021)La digitalisation des entreprises : une opportunité pour leur performance économique ;;Journal of Contemporary Business and Economic Studies Vol.(48) No.(2) ; page 521.

if a response requires reflection that may take time, it can generate tensions with the client. Dematerialization also leads to "infobesity," with information arriving in large quantities and on various platforms, making it challenging to assimilate all this information, resulting in a loss of concentration. Studies have demonstrated that after a "beep" signaling the arrival of emails, it can take up to 20 minutes to regain optimal concentration³¹.

Every company should be aware of the digital risks it may face before integrating digital tools. By understanding these risks in advance, businesses can be better prepared to identify and manage them, preventing potential harm to the organization.

2.4. The challenges of digitalization for companies:

Digital transformation is a process that all businesses have undergone, beginning with computing and data management. Companies have embraced tools like office automation and database systems to streamline their operations.

However, traditional businesses now feel pressured by digital-native companies, like GAFAM, whose success seems unparalleled in today's digital age. The emergence of disruptive business models further complicates matters, highlighting the need for a clean break from old paradigms. Successful transformation requires a shift in mindset towards a "digital-first" approach.

This involves rethinking practices and behaviors to address the challenges of digitalization effectively.

❖ **Visibility, Image, and Traffic Challenges:** Visibility, image, and traffic challenges stem from the omnipresence of digital technology in our lives. It impacts everything from TV to shopping, appointments, and leisure activities. Not embracing digital means missing out on visibility, opportunities for connection, and commercial potential, effectively excluding oneself from the market.

The use of digital tools should enable businesses to develop or optimize your potential to address the following challenges:

- **Visibility challenge:** Expanding visibility through digitalization poses challenges, but also offers significant opportunities. Utilizing website with effective search engine optimization (SEO), leveraging comparison websites and online directories, and tapping into social media platforms like LinkedIn, Video, or Pinterest can attract new customers and showcase companies' products to a wider audience. The digital sphere

³¹Hostaux, François. (2021-2022). "la transformation du métier par la digitalisation, mémoire de Master en sciences de gestion, Louvain School of Management, Catholic University of Louvain, pp42-43

allows for global reach, transcending geographical boundaries, and tapping into new markets. However, achieving success in this arena requires dedicated resources and meticulous management of digital platforms.

- **Image challenge:** Maintaining a positive image in the digital realm is crucial for brand reputation. Actively engage with web comparison sites, forums, and social media discussions to defend and showcase your products. Embrace both positive and negative feedback to build credibility and enhance e-reputation. Utilize social media platforms to connect with audience, demonstrate expertise, and establish legitimacy. Additionally, integrating digital tools like tablets into client meetings or trade shows can streamline data presentation and elevate brand image.³²
- **Traffic challenge:** Digitalization presents a traffic challenge, particularly for brick-and-mortar stores. It's not just about attracting online visitors but also converting them into physical store visitors or incoming calls. This integration is known as web to store. Potential customers discover you online through platforms like Google My Business, explore your website, read reviews, engage on social media, and then make the decision to visit your store or contact you. Digital activation extends to physical spaces as well, utilizing geolocation apps or technology to identify nearby prospects and entice them into the store with personalized offers.
- ❖ **The challenge of customer satisfaction and service quality:** Digital technology presents an opportunity to deepen customer relationships and manage service quality. It aggregates data, providing insights into customer behavior, visits, sales channels, and interests. All data processed and centralized in a CRM (Custom Relationship Management) or a DMP (Data Management Platform) offers a unique and omnichannel view of the buyer. This allows for more precise personalized marketing actions, leading to customer satisfaction and loyalty through relevant offers, targeted discounts, and rewards. Optimized stock management through digitization (real-time data centralization across all sales channels) ensures a coherent and simplified customer journey. Today, thanks to digital technology, buyers can make online purchases, pick up their items in-store (click and collect), and file a complaint on Facebook. Digital technology breaks down barriers and streamlines the customer journey.

³²Lahchame Kasmia, Djilali Chafik. (2021), "Chafik La digitalisation des entreprises : une opportunité pour leur performance économique, Vol.(48) , No(2) ," *Journal of Contemporary Business and Economic Studies*, p522.

While retailers leverage technology to enhance customer experience, the medical field strengthens its expertise through the adoption of new technologies (e-health and tele-surgery), transporters improve efficiency with online ticket purchases, and sales representatives present their offers on tablets. 3D printing and augmented reality are part of this trend toward virtualization, aiming to better serve individuals, meet personal expectations, foster loyalty, and encourage recommendations.

- ❖ **The challenge of optimizing performance:** Digitalization affects how businesses communicate and operate. It introduces concepts like mind mapping, social networks, and instant messaging, changing traditional business practices. Companies like Amazon and Media part have succeeded by embracing this digital shift. For businesses transitioning between old and new models, the challenge is to adapt and innovate.

Digital tech improves productivity by breaking down data silos, fostering collaboration, and integrating channels. It's now essential for businesses to embrace digitalization to remain competitive and unlock growth opportunities³³

2.5. Digitalization of the accounting profession:

2.5.1. Current tools of digitalization in accounting profession:

Field the world is in constant change, and man has no choice but to adapt to it, according to Socrates: "*What makes man is his great adaptability.*" The majority of companies have undergone or are undergoing a digital transformation, which impacts accounting due to its importance and necessity within the company. Accounting is both a management, information, and forecasting tool, and a well-maintained accounting system clearly reveals a company's financial situation. However, maintaining accounting records is a time-consuming task, and the emergence of many specialized software for invoicing, payroll, asset management, etc., has made the task somewhat easier. These software tools are reliable and available on the internet and in major stores, as they can be obtained from specialized companies.

2.5.1.1. Accounting software: aims to:

- ❖ **Maintain the company's general accounting:**

- Recording of invoices (purchases/sales);
- Recording of banking transactions;
- Recording of assets;
- Recording of varied operations;

³³*Idem.*

- Recording of end-of-year entries.
- ❖ **Manage transactions with third parties:**
 - Allows consultation of general and subsidiary accounts (customer accounts, supplier accounts, etc.);
 - Checking the balances of third-party accounts.
- ❖ **Reconcile subsidiary accounts:**
 - Effectively pursue receivables and payables and archive settled transactions;
 - Generate the general ledger, considering only the unreconciled (unsettled) transactions.
- ❖ **Use accounting recording templates:**
 - Accounting software allows the use of recording templates to facilitate the user's tasks.
- ❖ **Backup accounting data:**
 - Accounting software enables the archiving of accounting information, but periodic archiving tests should be conducted by the company to ensure the backup of useful data and the deletion of unnecessary data
- ❖ **Manage Opening and Closing of Accounting Periods:**
 - Automation features allow for the seamless opening and closing of accounting periods, reducing the risk of errors and ensuring compliance with reporting requirements.
- ❖ **Generate Financial Statements:**
 - Users can effortlessly generate a range of financial reports including trial balances, general ledgers, various journals, balance sheets, income statements, and statements of retained earnings, providing comprehensive insights into the company's financial performance.
- ❖ **Export Accounting Data:**
 - The software facilitates the export of accounting data, either in its entirety or selectively, for integration into external systems such as the accountant's software.
 - It also supports data import functionality, ensuring seamless data exchange between different platforms.³⁴

³⁴Sahoui N et Saib G ,2019, *Digitalisation des opérations comptables et impacts sur les procédures d'audit légal,mémoire de master en audit et contrôle de gestion , universite mouloud mammeri tizi ouzou faculte des sciences économiques, commercialeset , p56&57.*

2.5.1.2. Dematerialization of accounting:

Dematerialization in accounting refers to the transition from paper-based records to digital formats. This shift streamlines document management, particularly in logistics and customer interactions.

It simplifies classification and enhances accessibility for reviewing accounting documents. Key documents impacted include the journal and the general ledger.

- **The journal:** as the name suggests, it is a document where all operations that impact the company's assets are recorded daily and chronologically.
- **The general ledger:** is a document where all financial transactions carried out by the company are listed, classified by accounts according to the standards established by the Financial Accounting System (FAS).

These documents are mandatory and are of great importance within the company, requiring time and precision when editing them to avoid anomalies. But all that is over now, the accountant will no longer have to spend a lot of time carrying out these recurring accounting entries.

Today, there are accounting entry software programs that allow the dematerialization of these documents, making their editing easier and achievable in a short amount of time³⁵

2.5.1.3. Electronic archiving:

For all activities that generate a large number of documents requiring a significant amount of time to be chronologically organized in archive boxes, such as accounting, which generates numerous documents demanding close attention from the responsible parties to prevent them from being misplaced. There is now a new, simpler, and less tedious archiving system called "electronic archiving."

Electronic Archiving System (EAS): is a computer tool that allows for the permanent and secure storage of electronic documents. Once integrated into an EAS, a document becomes unchangeable and thus retains its probative value.

We also hear about Electronic Document Management (EDM) and servers; however, EAS differs from these two:

- **A server:** is a data storage tool, but it does not ensure the management of this data or the preservation of its probative value.

³⁵ *Idem.*

- **An EDM:** a computer system allowing for the management of electronic documents in their daily use. The latter cannot ensure long-term sustainability or the preservation of their integrity (they are susceptible to being modified).³⁶

Furthermore, this archiving method is quite developed in several countries around the world, such as the United States of America, where this system originated, and also in France. As for Algeria, this has not yet been adopted by administrations and businesses, but there is a strong willingness to implement this project, especially the archiving of paper documents in electronic form after their digitization, which is gradually gaining momentum.

2.5.1.4. Electronic Invoicing:

The invoice plays a very important role in inter-company relationships. However, its preparation and processing require a lot of time and concentration to avoid anomalies. Nowadays, there is a growing trend towards electronic invoicing. What exactly does this entail?

First and foremost, the so-called electronic invoice is a digitized invoice that is sent in electronic format (Word, PDF, etc.) rather than in paper format, accompanied by an electronic signature, of course. This implies the implementation of documented and permanent controls to establish a reliable audit trail between the invoice and the delivery of goods or services. However, there are three (03) principles to be respected:

- ✓ Authenticity of the origin;
- ✓ Integrity of the content;
- ✓ Legibility of the invoice, from its issuance to the end of the retention period.

Nevertheless, scanning a paper invoice to send it by email does not make it an electronic invoice. Secondly, the dematerialization of supplier invoices requires investments in software. Automatic reading of invoices and data recognition rates must be mastered, while these documents are most often in different formats. This is why human interventions are still necessary for invoice processing, especially when the data is poorly recognized or inconsistent. This requires organizational and material adaptation that many companies have not yet integrated.³⁷

2.5.1.5. The Electronic Signature:

We briefly mentioned it above when discussing electronic invoicing; its function is to identify the person who affixes it and to express their agreement in order to avoid any disputes.

³⁶*Le service Archives du CIG, la conservation des archives électroniques ; « Système d'archivage électronique », fiche pratique, Versailles, Juillet 2021, p.1.*

³⁷*(Sahoui Nora et Saib Ghenima) ; Op.cit,p53&59.*

To sign electronically, it is necessary to have an electronic signature certificate and also signature software. However, for legal entities, a seal is used instead of a signature.

Not to be confused: An electronic signature cannot be qualified as a digital signature because a signature is considered digital when it is handwritten and then stored in digital form after being affixed to a touch screen. The electronic certificate is a computer file that aims to authenticate a person's identity through a cryptographic process. It is a kind of electronic identity card indicating, in particular:

- ✓ The name and surname of the certificate holder;
- ✓ The corporate name of the company;
- ✓ The key allowing authentication of the certificate holder's signature.³⁸

Furthermore, the adoption of **Law No. 15-04 of 11 Rabie Ethani 1436** corresponding to February 1, 2015," *establishing the general rules relating to electronic signatures and electronic certification, expresses Algeria's intention to modernize its economy and administration. As we have seen in the previous chapter, this intention has been noticeable for several years, particularly in the computerization of civil registries, passports, biometric identity cards, and online declarations, etc. However, there is still a long way to go to realize this major project*"³⁹.

2.5.2. Steps for successful digitalization of accounting firms:

First and foremost, it is important to understand that digital transition is not just a software issue but largely involves everyone working in the firms. In fact, many people think that digital transformation is simply a matter of technology when it is not the case; it is primarily a challenge for accounting firms and an adventure that involves everyone (employees, collaborators, leaders, etc.) without exception.

Secondly, for the digitalization of a firm to be successful, it is imperative to involve both employees and clients.

To implement the digitalization process of a firm, it is advisable to follow the following steps:

- ❖ **Step 1: Appointment of a focal point:** As previously explained, digital transition impacts and will impact the accounting firm significantly, necessitating firms to rethink their organization. To successfully carry out this project, it is recommended to appoint a responsible person within the firm. However, it is preferable that this

³⁸*Ibid pp61.*

³⁹*Journal Officiel de la République Algérienne n°06 du 20 Rabie Ethani 1436, février 2015, p92.*

person has experience with digital tools, knows how to use them, regardless of their hierarchical level.

This individual will progress gradually and help other employees one by one. The focal point's role is to familiarize themselves with the new tools, configure them for the firm in collaboration with the software publisher, conduct internal tests, start equipping a few pilot clients, and showcase their initial successes to colleagues.

The focal point is the central person in the digital offer deployment project within the firm. They will closely monitor clients to be digitized, internal deployment, training, etc., and will also be capable of assessing the relevance of new tools, testing them, and implementing them.

- ❖ **Step 2: Sensitization of all employees:** As mentioned earlier, it is crucial to involve all employees in the firm's digitalization process from the beginning. This step involves starting to address the barriers to change, explaining the importance of dematerialization, and introducing the new tools. It is important to note that regardless of the number of employees, this approach remains essential.
- ❖ **Step 3: Progressive deployment of digital tools:** To succeed in this transition, it is advisable not to deploy digital tools to all employees and clients at once. After the focal point, it is necessary to select the individuals most likely to embrace change and who are more inclined towards new technologies. Consequently, the evident benefits will naturally influence the rest of the team to understand and handle the new procedures. Similarly, with clients, it is essential to start using these tools with the most receptive clients first.
- ❖ **Step 4: Technical training:** It is essential for each employee to receive familiarization and technical training on the new tools. These training sessions can be provided either by the focal point or by the software publisher if they offer such services.
- ❖ **Step 5: Client training:** Even though the majority of SMEs have not yet implemented a digital transformation process, it is already underway and presents opportunities for them. Additionally, certain aspects can be highlighted to clients to encourage them to take the leap:
 - ✓ Digitalization allows for the application of the new imperative of immediacy.
 - ✓ It also enables efficient transmission of key financial figures and indicators.
 - ✓ The significant tax and social changes require adaptability and responsiveness from firms.

- ✓ New exchange platform applications will help clients save time and become more involved in their financial data.

Once clients are convinced, this training step is crucial because if clients do not know how to use these tools, the firm's digitalization will be doomed to fail. Therefore, employees must explain step by step how to use these different tools and how to take advantage of the benefits they offer.

- ❖ **Step 6: Defining a new offering:** With digitalization, accounting firms save time and use it to diversify. However, the majority of a firm's revenue is still generated from traditional tasks (bookkeeping, tax returns, etc.). Nevertheless, with the time freed up from introducing and using new tools, the accounting firm can enhance the quality and level of its services, gradually increase its client base, and venture into new markets.

So, what does the new offering of accounting firms entail? This new offering revolves around three main aspects:

- ✓ The accounting platform that simplifies and streamlines exchanges;
- ✓ Reporting tools that provide access to essential accounting values at a glance;
- ✓ The time saved for advisory services allows the accountant to position themselves as the best point of contact for businesses⁴⁰.

2.5.3. The impact of digitalization on the accounting profession:

The benefits of information technology-based accounting and auditing in an organization are numerous. Firstly, it allows for quicker access to the financial position of the organization with just the press or touch of a button. This enables accurate assessment of the revenue generated on a daily, weekly, monthly, quarterly, and annual basis within seconds. Additionally, it provides detailed expenditure information, which aids management in cost control and facilitates decision-making. The use of technology also allows for budgeting and forecasting, reducing clerical and administrative overheads, and enabling project monitoring and variance analysis.

Furthermore, information technology-based accounting and auditing can help prevent fraud, eliminate drudgery in financial planning, and provide timely reports and financial statements after every transaction. It also offers an audit trail and alarm system for security purposes, deterring unauthorized access. The data processing system expedites audit work on final accounts by providing immediate and effective recording control over assets and

⁴⁰*Livre blanc,xin books ;2021 ; « Réussir la digitalisation », WinBooks, pp26-27.*

liabilities, allowing for easy reconciliation between various accounts. Moreover, through the use of information technology, debts of doubtful value can be highlighted promptly for swift action, and quick controls can be implemented over slow-moving and obsolete stocks, with regular reconciliation carried out between physical and book records of stock. These controls and tests are not easily carried out with most manual systems.⁴¹

Table 8: Transformation Duties of Accountancy Profession and Related Technologies.

Year	Job duties	Tools /technologies used
1887	Bookkeeping, financial statement preparation and attestation, cost accounting, fraud investigation, establishment of accounting systems and controls.	No equipment other than a slide, rule for percentages, reports are handwritten on accounting rule paper.
1938	Tax return preparation, financial statement auditing and preparation, business management consulting, establishment and evaluations of accounting systems and controls.	Large mechanical adding machines, comptometers, and typewriters.
1983	Tax return preparation, financial statement auditing and preparation, business management consulting, establishment and evaluation of accounting system and controls.	Spreadsheet programs, electronic calculator, copiers, printers, and word processing software.
2012	Everything in 1983 plus outsourced CFO services, performance measurement attestation, business valuation, forensic accounting and fraud investigations, corporate governance and systems auditing and business consulting.	Desktop and laptop computers, tablets and smartphones, cloud computing, Excel, Word, PowerPoint, QuickBooks, video conferencing and virtual meeting.

Source: Created by researchers collecting information from article the future of accountancy profession in digital era.

3. The future of the accounting profession in light of current transformations and developments

3.1. the liberal accounting profession between disappearance and evolution.

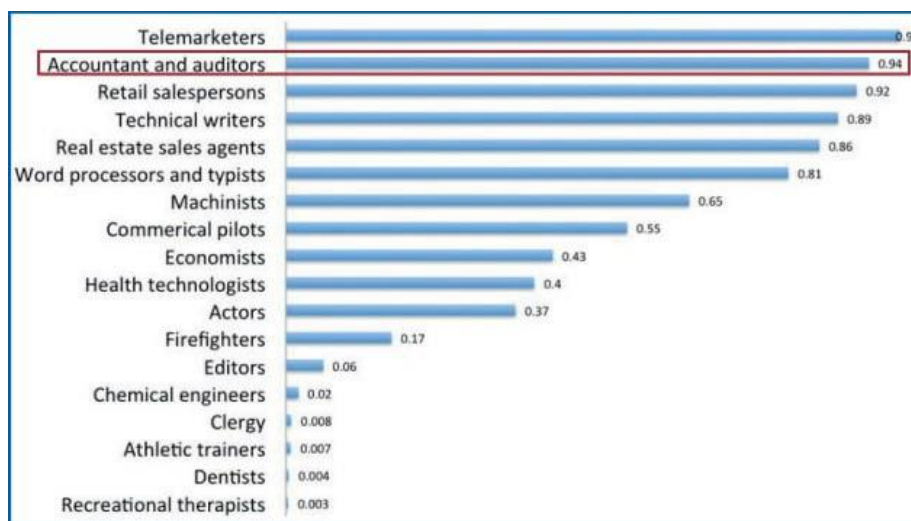
The future of the accounting profession is based on several studies. According to a 2014 study, 42% of jobs are at risk of being automated by 2025 due to digitalization, which could lead to the disappearance of 3 million jobs in France. A study from the University of Oxford in

⁴¹Adebayo Paul Adejola, PhD, *Technology Changes and the Impact on Accountancy Profession*; Bingham university journal of accounting and business (BUJAB) , pp 05

Chapter 01: The Liberal accounting profession and digitalization

September 2013 indicates that the probability of the accounting profession disappearing in the next 20 years is very high, reaching around 94% due to automation.

Figure 4: the probability of robots taking over jobs in the next 20 years, 1=max.



Source: Business Insider - The Economist.

Furthermore, a study focusing on the city of London between 2001 and 2014 reveals that 30,000 accounting positions have disappeared, twice as many as cashiers in stores, confirming the impact of automation on the accounting profession.

Based on research done by the Sapiens Institute, the extinction date of the profession is estimated to be between 2041 and 2056. E. Tison even states that "the extinction period we have estimated is a terrible realization for this profession: young people currently training as accountants will not be able to practice this profession throughout their lives and will be forced to reorient themselves and therefore undergo new training during their careers."

In addition, the study conducted by Wolter Kluwers on over 500 employees of accounting firm executives found that 63% of working time is dedicated to encoding tasks, preparing reports, and filing tax returns. Only 22% of the time is devoted to tax advice, whereas executives would prefer to focus services on advisory.

The author emphasizes that there are a number of obstacles facing the accounting profession, with a focus on the impending problem of digitalization. He thinks the industry may overcome this obstacle by redefining its purpose to include full-service offerings.

This change means that accountants will become consultants, experts in both financial and non-financial data, change from being expert businesses to client experts, and make their companies more interactive and communicative.

Additionally, accountants can specialize in digitization, guarantee security, and even help customers shape their company models. The goal of this all-encompassing strategy is to provide

accountants the flexibility and agility they need to prosper in a world that is becoming more and more digital.⁴²

In conclusion, Firms must change, they must adapt, they must evolve in order not to die, and this involves a new methodology that must reposition the professional activity of the accountant in relation to their changing environment. It is necessary to organize the transition from accounting to consulting, from the accountant business owner obsessed with the organization of their firm to the dynamic consultant responsive to the changes of their clients.

3.2. The trends of digitalization in the accounting profession:

3.2.1. Enterprise resource planning (ERP):

ERP refers to a type of software that organizations use to manage day-to-day business activities such as accounting, procurement, project management, risk management and compliance, and supply chain operations. A complete ERP suite also includes enterprise performance management, software that helps plan, budget, predict, and report on an organization's financial results.

ERP systems tie together a multitude of business processes and enable the flow of data between them. By collecting an organization's shared transactional data from multiple sources, ERP systems eliminate data duplication and provide data integrity with a single source of truth.

❖ **The benefits of ERP for accountants:** Firstly, using a fully integrated ERP system allows accountants to manage all accounting needs in a single system, saving time and increasing accuracy by eliminating the need to cross-reference and re-enter data into multiple systems. It also provides a customizable dashboard for managing various projects, accounts, and functions, as well as the ability to choose external systems for specific needs.

Secondly, an ERP system can increase productivity and improve insights into the business by automating accounting and financial tasks, simplifying accounts receivable and payable, and providing easy access to real-time data for better financial tracking.

Lastly, ERP systems enable accurate job costing, which is crucial for preparing income statements and identifying areas for efficiency improvement and cost savings, ultimately leading to better decision-making and improved profit margins.

ERP systems are critical for managing thousands of businesses of all sizes and in all industries. Today, ERP is as indispensable as the electricity that keeps the lights on.⁴³

⁴² *Phillipe Arraou ;(2016) ; l'expert-comptable et l'economie numerique ; Edition Septembre 2016 Conseil supérieur de l'ordre des experts-comptables ; france ; pp111-113.*

⁴³https://www.geniuserp.com/resources/blog/back-to-basics-erp-for-accountantsconcluded_on_04/04/2024_03:33)

3.2.2. Artificial intelligence:

Artificial intelligence (AI) refers to the development of computer systems that can carry out tasks traditionally requiring human intelligence, such as speech recognition, decision-making, and pattern identification. AI encompasses various technologies, including machine learning, deep learning, and natural language processing (NLP)⁴⁴.

❖ **The benefits of artificial intelligence for accountants:** The impact of Artificial Intelligence (AI) on the accounting profession is substantial and multifaceted. Firstly, AI has led to the automation of routine tasks, such as data entry, validation, and transaction processing, which were previously time-consuming and resource-intensive. This automation has improved accuracy, reduced manual effort, and enabled accountants to focus on higher-value activities such as business management and strategy. Additionally, AI has enhanced data analysis through predictive analytics, providing valuable insights from financial data and facilitating data-driven decision-making. Furthermore, AI has improved decision support by offering precise and timely data, leading to improved overall performance within businesses. Moreover, the scalability and cost savings brought about by AI have significantly altered the functioning of businesses, including the accounting profession, by automating repetitive tasks and increasing efficiency.

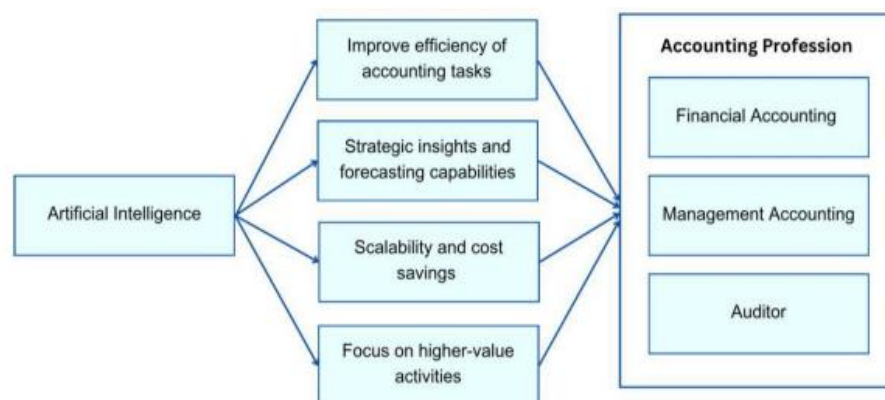
AI has also enabled accountants to focus on more complex tasks such as analysis and decision-making, ultimately leading to more reliable and meticulous accounting data. Lastly, AI has allowed accountants to expand their consulting services in everyday business operations, facilitating the real-time analysis of unstructured data and providing actionable, predictive insights.

Overall, the adoption of AI in the accounting profession has led to increased efficiency, reduced errors, and the ability to provide comprehensive financial guidance to clients⁴⁵.

⁴⁴<https://www.coursera.org/articles/what-is-artificial-intelligence> consulted on (03/04/2024 2:40)

⁴⁵Nurl afza and others; 2024; *the impact of artificial intelligence on accounting profession: a concept paper ; business management and strategy ; vol 15; no 1.*

Figure 5: the impact of artificial intelligence on accounting profession.



Source: Nurl afza and others; 2024; the impact of artificial intelligence on accounting profession.

3.2.3. Cloud computing:

Cloud computing, now familiar to most internet users, is a service for managed storage on remote servers, allowing access to data from multiple platforms. Thanks to this service, there is no longer a need to install applications or carry external hard drives or USB keys to access data on different devices. The remote servers are secure and located in monitored storage centers, offering a high level of security.

❖ **The benefits of cloud computing:** This service is particularly useful for accountants, as it allows them to access all of their data from any device while moving freely.

Furthermore, there are increasingly more financial solutions based on the Cloud, such as Silverfin or Fid-Manager, which facilitate document exchanges between accountants and their clients.

Clients can digitally deposit their documents on these platforms, and accountants can access them directly. Similarly, accountants can communicate with their clients and track the progress of cases without the need for in-person meetings, simply by using the platform.⁴⁶

3.2.4. Blockchain:⁴⁷

The blockchain is a technology that allows for the transparent transmission of information between users. Each transaction carried out within a blockchain is recorded and accessible to all users. To ensure the security of the system, each "block" consists of three elements:

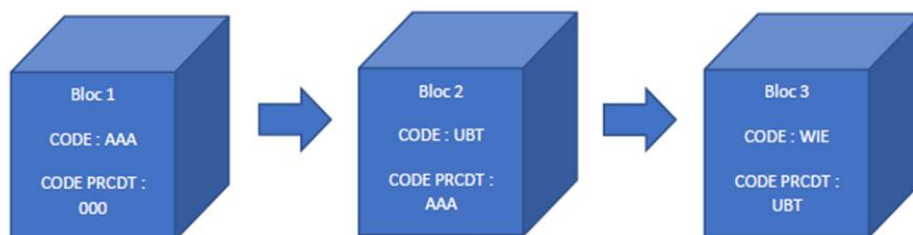
- the details of the operation,
- a specific code for the block,

⁴⁶ (François Hostaux) *Op.cit*; pp 16.

⁴⁷ *Ibid*; pp 24 and 27.

- a code linked to the previous block, thus establishing the traceability of all operations.

Figure 6: illustration of the operational mechanisms of blockchain technology.



Source : Hostaux François (2022), la transformation du métier par la digitalisation.

In the event of a modification to a block, it automatically receives a new code, disrupting the blockchain and making any modification identifiable. Each block is then sent to all users of the blockchain for approval and then added to each user's blockchain.

The blockchain has unique characteristics that make its daily use increasingly likely, including near-instantaneous settlement, a distributed ledger, and the irreversibility of transactions. Organizations that create a blockchain also control access to the data, determining who can access it and what information they can access.

❖ **The benefits of blockchain:** The blockchain is used in the world of cryptocurrencies, but it is also beginning to be used in the notarial field to ensure the authenticity of contracts, particularly for loans and mortgages. As a tool suited to financial transactions, the blockchain allows for peer-to-peer transactions without the intervention of a bank, making them faster and less costly.

Other aspects of the blockchain that could affect the accounting sector include smart contracts, which allow for the automation of transactions when certain conditions are met, as well as the ease of verifying financial records, preventing any falsification of data through an alarm system that signals any modifications made.⁴⁸

3.3. Recommendations for Accountants:

It is essential to consider the necessary skills for future accountants. We initially outlined the vital competencies required for managing accounting documents. Looking ahead, it is crucial to consider the development areas for accountants to advance in their profession. This leads to our primary recommendations, which is divided into three sub-categories, each corresponding to a distinct profile previously identified.

⁴⁸Idem .

❖ **The Future Accountant:** Given the inevitable automation and dematerialization of accounting document processing, future students aspiring to pursue a career in accounting should not confine themselves to studies that limit them to tasks without added value. Instead, they should significantly deepen their knowledge throughout their studies to be capable of interpreting, explaining, analysing, and suggesting ideas in areas where human expertise is indispensable.

Assuming that other job functions are not impacted by technology, accountants should also develop cross-functional skills. These may include communication habits to advise clients or propose projects to their superiors. Additionally, they should have a more in-depth mastery of IT and technological tools to manipulate and configure software. It's no longer just about entering numerical data.

❖ **The accountant currently in the Job Market with few qualifications:** Accountants currently in the job market with limited qualifications are at a higher risk of being sidelined in their roles, particularly those primarily engaged in data entry and lacking expertise in other functions. It is recommended that they pursue additional training to enhance their knowledge.

However, it is essential to differentiate between those who are passionate about their work and those who are in their positions reluctantly. Understanding the motivations of individuals in these roles is crucial, as it may impact their willingness to pursue further training.

❖ **The Accountant in the Job Market with Extensive Qualifications:** Finally, accountants with extensive qualifications are likely to benefit the most from automation. However, it is recommended to remain vigilant and closely monitor technological advancements, as emerging technologies may challenge other aspects of the profession.⁴⁹

In conclusion, the evolving role of accountants in the face of increasing technologies necessitates a proactive approach to skill development and adaptation to remain competitive in the market.

Ultimately, digitalization has impacted the liberal accounting profession. It has made tasks more efficient and accurate, enabling accountants to take on more strategic and

⁴⁹Widad Sharif, 2018 ; *Quelle sera l'évolution du métier de comptable face à l'accroissement des technologies ?;Travail de Bachelor réalisé en vue de l'obtention du Bachelor HES ; Haute École de Gestion de Genève (HEG-GE) ; Filière Economie d'entreprise ; pp 32.*

Chapter 01: The Liberal accounting profession and digitalization

advisory roles, although adapting to new technologies can be challenging, the benefits are greater than the downsides, resulting in improved service quality and enhanced client satisfaction.

Conclusion

This chapter has provided a comprehensive overview of fundamental concepts of accounting and digitalization, offering valuable insights into the evolving landscape of financial management in Algeria. Beginning with an exploration of accounting principles, we traced the historical roots and contemporary framework of general accounting, elucidating its core objectives and principles of accountability. Delving into the financial accounting system, we analyzed its evolution and legislative framework in Algeria, providing a contextual understanding of its operational dynamics. Transitioning to the liberal accounting profession, we assessed its current state and delineated the organizational structures and professional profiles shaping the Algerian financial ecosystem.

In the subsequent section on digitalization, we embarked on a journey through the transformative realm of technology, dissecting its conceptual framework and distinguishing between digitization and digital transformation. Examining the impact of digitalization on companies and professions, we explored the evolving landscape in Algeria and the pivotal role played by technology in reshaping organizational paradigms. Particularly noteworthy was our exploration of the digitalization of the accounting profession, highlighting the tools, strategies, and challenges inherent in this transformative process.

As we contemplate the future of the accounting profession amidst ongoing transformations and technological advancements, it becomes evident that adaptation and innovation are imperative for survival and success. By embracing emerging trends such as ERP, Blockchain, AI, and Cloud Computing, accountants can position themselves as catalysts for change, driving efficiency, transparency, and value creation within the financial ecosystem. As we navigate this digital age, the recommendations provided serve as guiding principles for accountants to thrive in an era defined by constant evolution and innovation.

Chapter 02: The digitalization and its impact on the liberal accounting profession.

Introduction

Digitalization is transforming industries worldwide, from the most complex professions to the simplest. Our study focuses on the accounting profession, specifically within the Algerian liberal accounting sector. The objective is to understand how digitalization impacted accounting tasks. To gain practical insights, we conducted a six-month training program at B&B Audit and Advisory Firm, an Algerian liberal accounting firm committed to keeping up with digital advancements.

This chapter is divided into two sections. The first section contains three subsections: the first provides an overview of B&B Audit and Advisory Firm, including its mission, services, and organizational structure. The second subsection details the toolset used by the firm and presents employee perspectives on each tool, gathered through walkthrough interview with B&B's employees. The third subsection offers expectations of B&B's toolset to enhance the services provided to the firm's clients.

Moving on to the second section, we administered a questionnaire consisting of two parts. The first part is based on our practical study and aims to analyze the impact of digitalization on accounting practices, the skills of accountants, and the challenges faced by the liberal accounting profession in its development. To safeguard our software idea, we included superficial questions in the questionnaire, which form the second part related to market study. In this part, we seek to understand the working methods, the professionals' acceptance of such software, the challenges they encounter in their firms, and the criteria used to select software similar to ours.

Utilizing both quantitative and qualitative methods allow us to gain a comprehensive understanding of the reality within the liberal accounting profession.

Section 01: Overview of B&B audit and advisory firm: Services, Tools, and expectations .

In this part, we'll talk about the B&B reception firm and the different services it offers using lots of digital tools. Then, we'll look at how well these tools work and how an audit and advisory firm could make the services even better.

1. Presentation of B&B Audit and Advisory firm:

B&B is an independent Audit and Advisory firm founded by Mr. BOUSRI Lotfi, a certified accountant and auditor registered with the National Order of Accountants under number 280. A policy of strong growth has been pursued since its creation in April 2008 in order to promote the integration of new employees and to claim an original position on the Algerian market, based on a particular commitment to its clients, guaranteed by an exceptional quality of service.

1.1. Objectives of B&B firm:

- Listening, understanding, and responding to the needs of them clients is the first objective in order to provide them with the best of B and B skills;
- Contributing to the efficiency and smooth operation of the clients' organization by providing them with useful services that exceed their expectations;
- B&B firm aims to be a source of renewal and dynamism in the field of management for the clients;
- B&B firm seeks to be a quality organization from all points of view;
- B&B firm strives to be an attractive employer for highly qualified employees.⁵⁰

1.2. Values of B&B firm:

- Pragmatism: no unnecessary complexity but the will to be clear and operational, in all situations, to not disrupt the activity of the clients;
- Proximity: geographical proximity through the team of B AND B that comes to client's residence when needed; business proximity through understanding customer activity;
- Professionalism: adherence to standards and technical expertise to meet customer expectations;
- Proactivity: active listening and search for solutions;
- Multi disciplinarily: cross-functional skills within the group and knowledge of y? the profession and industry of the client;

⁵⁰ Internal document at B&B (Cabinet presentation report)

Chapter 02: The digitalization and its impact on the liberal accounting profession.

- Utility: the foundation of all B&B actions, serving the clients;
- Professional secrecy: An Ethics and Behavior Charter is signed by partners and employees.

1.3. Intervention Areas of B&B firm:

❖ Audit and Advisory:

- **Statutory Audit (Statutory Auditors):** The audit provides a true and fair view of the accounting, financial, organizational, or operational situation of the company.

It will result in the issuance of opinion reports and special reports as provided for by the Commercial Code and Law 10-01 on the professions of chartered accountant, statutory auditor, approved accountant, and subsequent texts.

The accounts certification mission, commonly known as (Statutory Auditors), is a legal obligation, mandatory for joint-stock companies (SPA), and has become mandatory even for LLCs since January 2006 (Article 12 of Ordinance No. 05-05 of July 25, 2005 on the supplementary finance law for 2005).

- **Contractual Audit (Accounting Expertise):** Certification can take the form of a contractual audit, at the request of partners, shareholders, or managers. This is done outside the legal obligation.

It can take several forms:

- **Financial Audit:** Financial audit involves a thorough examination of the financial statements of the entity. It allows to express an informed opinion on the accuracy and regularity of these statements as at the closing date of the accounts. This audit can be carried out through document checks, physical observations, surveys, or direct confirmations from certain suppliers and customers.

At the end of this audit, the client will have reliable and relevant financial information, compliant with current accounting standards. He can transparently present it to stakeholders in the company, especially to shareholders. It will also guide him in strategic choices and in the development of the current or future activities.

- **Organizational Audit:** Organizational audit allows an entity to better understand its organization, its strengths and areas for improvement in order to evolve towards a high-performing organization.

The work is presented to management with a final report formalizing the current state, dysfunctions, and recommendations.

Chapter 02: The digitalization and its impact on the liberal accounting profession.

The scope of the organizational audit is defined based on the issues raised by the company and the expressed needs. The approach is co-constructed with management. Based on the recommendations, B&B Audit and Advisory may also offer support in implementing actions.

- **Internal Procedures Audit:** This audit assesses the correct application of internal procedures in the various processes of the entity. It also evaluates the strengths, weaknesses in operations, and risks related to potential system failures.
- **Pre-sale Audit:** A pre-sale audit of a company is necessary to define and optimize its value, mitigate risks, and facilitate discussions with stakeholders at the time of sale. Estimation is always delicate; the value of a company is not simply the sum of the value of all its components. The exercise is more complex and relies on elements specific to the company itself (business, clients, know-how, history, financial results, staff, lease contracts, development projects, etc.) as well as external factors (sector, economic conditions, competition, regulations, etc.). Not to mention brand values or management quality.

The evaluation is primarily economic before being financial and is based on an audit, not just on reading balance sheets.

Furthermore, valuation depends on the context of the operation and its recipient. It is evident that the interests of the seller and potential buyer are often diametrically opposed.

The pre-sale audit allows the manager to better understand the potential of their company as well as the value they can expect after the sale operation. But it also helps optimize the selling price and reduce financial, legal, and asset risks associated with the sale.

- **Acquisition Audit:** During acquisitions or company restructurings, the acquisition audit should enable the acquirer to assess all risks that may affect their investment decision.

This audit is an examination carried out by a competent and independent professional to express an informed opinion on the accuracy, fairness, and true picture of the target company's annual accounts. This mission involves conducting an audit of the target

Chapter 02: The digitalization and its impact on the liberal accounting profession.

company in terms of its accounting, financial, tax, social, and legal aspects to highlight any adjustments to accounts, recurring elements, proven or potential risks⁵¹.

❖ Accounting:

From the preparation of annual accounts to the complete outsourcing of your administrative and accounting tasks, including management advice, your accountant is your closest advisor.

B&B Audit and Advisory developed a wide range of tailored support perfectly suited to client's expectations, their industry, and their specific needs,

B&B Audit and Advisory mission is to involve ensuring compliance with client legal obligations regarding accounting and taxation. Additionally, preparation of annual accounts, accounting entries, tax returns, forecasting... Their accounting services ensure perfect compliance with regulations, save time for business, and ensure the longevity of the client's company.

❖ Social Management and Payroll:

The primary mission of B&B Audit and Advisory is to save customer time by relieving them of the tedious tasks related to payroll: payslips, declarations...

In a constantly evolving social environment, the role of the firm also involves ensuring full compliance with labour laws in all events in the life of the company: hirings, layoffs, work accidents.

Because it believes that human resources are the primary wealth of an organization, and it also provides advice on how to make the most relationships with employees.

B&B Audit and Advisory offer a complete range of HR solutions tailored to the size of the company and the industry to ensure full compliance with social obligations, but also to maintain a good social climate that fosters the daily involvement of employees.

❖ Physical Inventory of Assets and Stocks:

A precise and exhaustive physical inventory reconciled with the accounting base is essential for effective management of tangible assets. It is above all a guarantee of the accuracy of the accounts. Regulations are there to remind us. Financial statements must reflect the company's assets. It is the responsibility of the directors.

In addition to the legal obligation, physical inventories of assets and stocks help minimize the risks of theft and misappropriation of the Centre's assets.

⁵¹ Internal document at B&B (Cabinet presentation report).

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❖ Legal Advice:

B&B Audit and Advisory expertise in legal advice covers the following three (03) areas:

- The Commercial Companies Code to secure every key moment in the life of entities;
- The Commercial Code;
- Various tax codes.

❖ Financial Advice:

B&B Audit and Advisory firm is able to offer a comprehensive analysis of client company from a financial perspective. The firm advises on defining the best financial strategy to adopt according to the activity. Its guides on the control measures to implement. Alongside clients, the firm negotiates with banks and financial institutions locally and can direct towards optimal solutions.

The business provides financial advice on occasions such as:

- Financial structuring (new business creation or expansion);
- Mergers and consolidations;
- Business valuations.

❖ Training:

The goal of B&B Audit and Advisory firm is to help clients to improve their skills and those of their employees in the following areas:

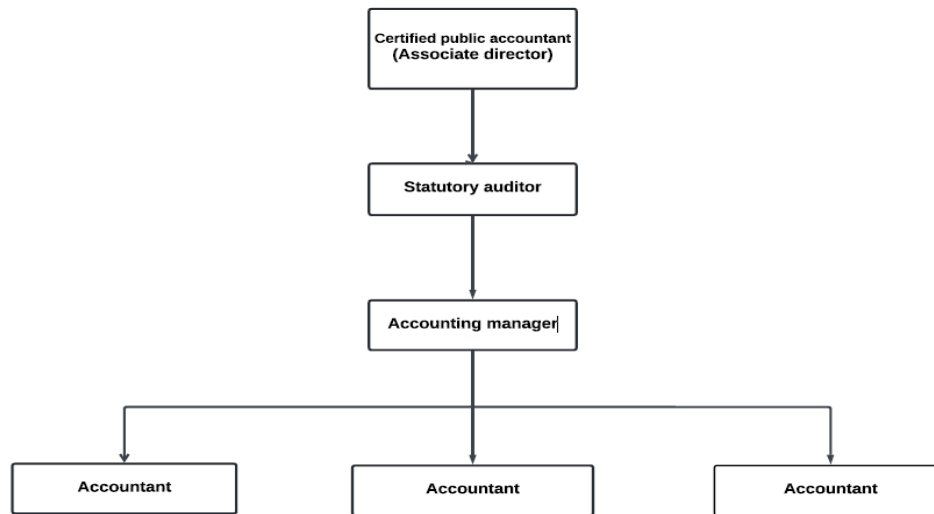
- ✓ Accounting and financial system;
- ✓ Algerian audit standards;
- ✓ Anti-money laundering (knowledge of current legal framework and obligations);
- ✓ Internal control system of a company.

❖ Assistance in Business Creation:

The assistance starts from the project idea to its realization, including: market research, business plan, types of financing, judicious choice of the company's legal form.⁵²

⁵² Internal document at B&B (Cabinet presentation report)

1.4. Organizational chart of the B&B firm⁵³:



2. B&B Audit and Advisory firm toolset:

During our internship at B&B Audit and Advisory firm, we had the opportunity to learn and use a variety of important tools to effectively manage business tasks, meet client needs and ensure accounting compliance with legal and industry requirements. Due to careful observation during the internship, we gained a good understanding of the firm's digital tools. To further build on these observations, we conducted interviews named "walkthroughs" , this qualitative research method allows for the collection of rich, detailed data on a B&B firm's employees' reasoning, challenges, and preferences that might not be captured through other methods like standard interviews, here are some questions to consider:

- a) Can you list the primary tools and software you use daily in your role at the firm?
- b) For each tool you mentioned, can you describe its primary function within the firm?
- c) How does each tool contribute to the efficiency and effectiveness of your tasks?
- d) which digital development tool do you believe has the greatest potential to enhance overall firm performance, improve client satisfaction, and facilitate the daily tasks of employees?

The objectives of these walkthrough interviews were to gather their perspectives and challenges regarding the current tools in the firm, as well as their expectations for future digital development in the accounting profession. Additionally, we hope to learn more about how digital tools enhance the quality of accounting practices and improve client satisfaction.

⁵³ Prepared by us from an internal document B&B.

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2.1. Desk tools (Microsoft office):

Microsoft Office plays a pivotal role in accounting firms, providing a suite of tools that complement accounting software. The key components of Microsoft Office that are widely used in accounting firms include:

2.1.1. Microsoft Excel:

Despite being considered a traditional tool; Excel remains an essential resource in accounting firms for a variety of tasks. These include calculating simple costs, creating supplier statements, tracking bank recovery statuses, monitoring fee payments, organizing accountant tasks, and managing client declarations. Its versatility and powerful features continue to make it invaluable for maintaining accurate financial records and streamlining accounting processes

❖ Advantages:

- Simple to learn and therefore available to a wide audience;
- Users can tailor their pages by combining formulas, tables, cross-border capabilities, and other features;
- Excel facilitates and offers effective tools for data analysis.

❖ Disadvantage:

- Mistakes made during manual data entry can result in inaccuracies in calculations and analysis.
- The limited capacity of Excel spreadsheets poses a challenge for accounting firms handling large volumes of data;
- Working together in real time on a single Excel file can be challenging, resulting in communication issues within groups.

Figure 7: Excel worksheet displaying the control of accounting entries.

		SELON LA BASE COMPTABLE		SELON NOTRE VERIFICATION		CONTROL	
Compte Débit	Compte Crédit	M.Débit	M.Crédit	M.Débit	M.Crédit	écart Débit	écart Crédit
38 ACHATS		5 356 837,63	-	5 356 837,63	-	-	-
	401 FOURNISSEUR	-	5 356 837,63	-	5 356 837,63	-	-
TOTAL		5 356 837,63	5 356 837,63	5 356 837,63	5 356 837,63	-	-
Compte Débit	Compte Crédit	M.Débit	M.Crédit	M.Débit	M.Crédit	écart Débit	écart Crédit
38 ACHATS		114 126,00	-	114 126,00	-	-	-
445300 TVA		1 038 154,00	-	1 038 154,00	-	-	-
	401 DOUANES	-	1 152 280,00	-	1 152 280,00	-	-
TOTAL		1 152 280,00	1 152 280,00	1 152 280,00	1 152 280,00	-	-
Compte Débit	Compte Crédit	M.Débit	M.Crédit	M.Débit	M.Crédit	écart Débit	écart Crédit
381110		55 500,00	-	65 910,12	-	-	10 410,12
401600		10 410,12	-	-	-	-	10 410,12
445300		4 680,00	-	4 680,00	-	-	-
656000		50 000,00	-	50 000,00	-	-	-
	401 TRANSIT	-	120 590,12	-	120 590,12	-	-
TOTAL		120 590,12	120 590,12	120 590,12	120 590,12	-	-
Compte Débit	Compte Crédit	M.Débit	M.Crédit	M.Débit	M.Crédit	écart Débit	écart Crédit
38		272 616,00	-	272 616,00	-	-	-
445300 TVA		51 797,04	-	51 797,04	-	-	-
	401SWISSPORT	-	324 413,04	-	324 413,04	-	-

Source: Internal document.

2.1.2. Microsoft Word:

Microsoft Word is sometimes used in accounting firms to create a variety of documents. These include financial statements such as cash flow statements, cash register feeds, and verbal trials. Additionally, it is utilized for drafting formal demands, agreements, and conventions. The versatility and user-friendly interface of Word make it ideal for producing clear, professional, and well-organized documents necessary for efficient accounting operations.

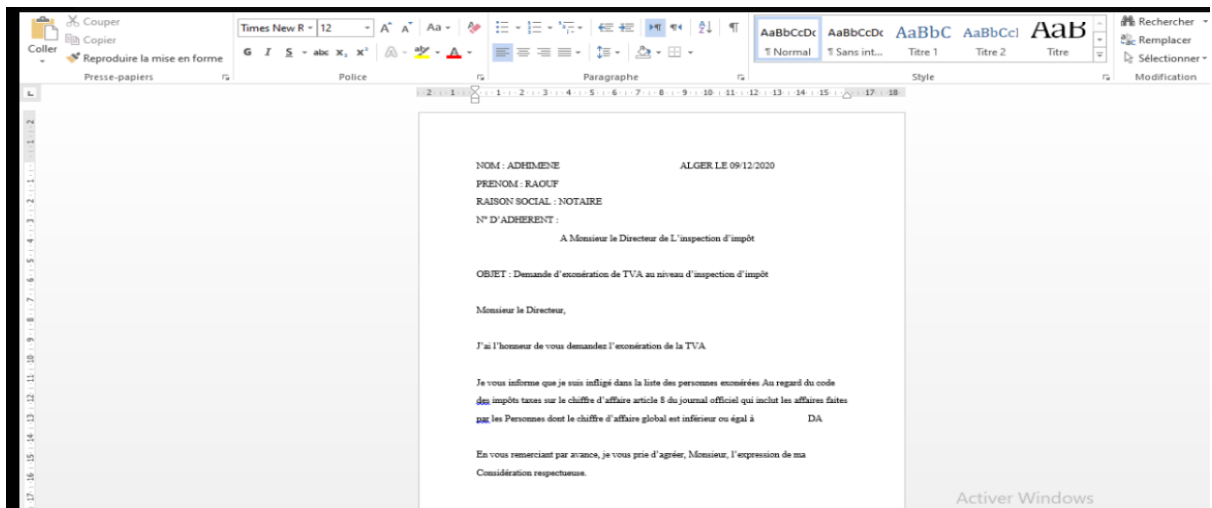
❖ Advantages:

- Word Provides a wide range of editing tools to organize documents;
- Word is useful for teams working on projects simultaneously, offering the ability to collaborate on a single document in real time.

❖ Disadvantage:

- Word cannot be used for complex calculations and analysis that could interfere with financial transactions;
- Word offers diagramming features; they can be more difficult to create than Excel;
- Data security can be an issue for Word especially when sharing simple documents.

Figure 8: Word document representing a request to the Tax authority.⁸²



Source : Internal document.

2.1.3. Microsoft PowerPoint :

We have observed that firms extensively use PowerPoint to enhance various aspects of their operations. It is utilized for planning audit missions, conducting training sessions, and presenting client cases. Its ability to create visually appealing and organized slideshows makes it an invaluable tool for effectively communicating complex information and strategies by incorporating charts, graphs, and multimedia elements, firms can deliver engaging and professional presentations that facilitate understanding and decision-making.

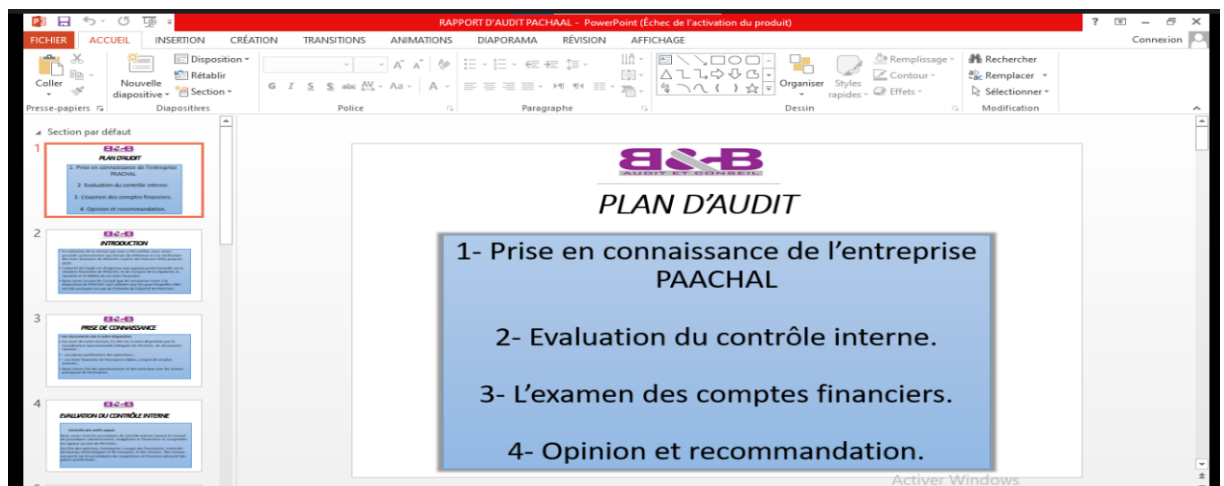
❖ Advantages:

- PowerPoint uses charts, diagrams, etc. for easy presentation of financial information. It provides the ability to create interesting visuals using;
- Presents a uniform and sequential selection of construction methods important for professional thinking;
- PowerPoint is user-friendly and straight forward to use.

❖ Disadvantage:

- PowerPoint's dynamic features can be difficult to manage, which can be overwhelming for beginners;
- It is easy to overload a PowerPoint presentation with too much information, which can disrupt communication;
- Hardware or software malfunctions can make PowerPoint presentations not functioning effectively, causing problems during important meetings.

Figure 9: PowerPoint slide illustrating an Audit mission Plan for a client.83



Source: Internal document

2.2. PDF readers and scanners:

PDF readers and scanners serve vital functions across multiple domains. PDF readers enable users to engage with PDF files by opening, viewing, and interacting with them. They are frequently employed for tasks like reading documents, sharing them with others, and incorporating comments or annotations to facilitate collaboration. Furthermore, PDF readers possess the capability to convert PDF documents into alternative formats like Word, Excel, or PowerPoint, empowering users to edit or repurpose the content as needed.

Scanners fulfil a critical role in the archival and digitization of documents. They transform physical documents into digital formats, streamlining storage, organization, and retrieval processes. Digitizing documents not only reduces paper clutter but also enhances efficiency in document management. Additionally, by transitioning to digital documentation, firms can curtail paper consumption, thereby lowering costs associated with paper usage.

❖ Advantages:

- Pdf offer various security feature such as password protection, encryption, and digital signatures, among others, which protect sensitive information from unauthorized access and tampering;
- These PDF compression techniques save a file's size without degrading the quality, hence storing, transferring, and archiving large volumes of documents with ease.

❖ Disadvantage:

- Converting or creating PDF files often requires the use of special software; This may result in additional costs;

Chapter 02: The digitalization and its impact on the liberal accounting profession.

- The scanning process itself can degrade the quality of the document, potentially resulting in a loss of clarity and detail.

2.3. Accounting software:

2.3.1. PC COMPTA:

a comprehensive accounting software designed to handle general, auxiliary, and analytical accounting tasks. It supports multiple files and multiple fiscal years, with the only limitation on data volume being the size of the hard drive. The software is available in both network and single-user versions, each featuring the same user-friendly interface.

❖ Advantages:

- Software allows real-time monitoring of a customer's financial situation, regular reporting and tax declarations;
- PC Compta provides security measures to protect customer transaction data and ensure confidentiality and data integrity.

❖ Disadvantage:

- The initial costs of purchasing and implementing software such as PC Compta can represent a significant financial investment for accounting firms;
- Initial training is often required to become familiar with all aspects of the Software, which may take additional time;
- It is important to keep the software updated to take advantage of the latest features and security issues that may require regular maintenance;
- Although the PC Compta offers certain capabilities, it sometimes lacks the flexibility to meet the specific needs of accounting firms;
- Accountants may depend on PC Compta software for their daily activities, this can cause problems if the system is damaged or not working properly.

Figure 10: The accounting entry in the reopening journal.

PIECE	DATE	COMPTE AUXILIAIR	REFERENCE	LIBELLE	DEBIT	CREDIT	
	31/12/22	101300		REOUVERTURE AU 01/01/23		2 000 000,00	
	31/12/22	106000		REOUVERTURE AU 01/01/23		31 520,00	
	31/12/22	110000		REOUVERTURE AU 01/01/23	420 751,97		
	31/12/22	215100		REOUVERTURE AU 01/01/23	19 327,00		
	31/12/22	215300		REOUVERTURE AU 01/01/23	57 404,60		
	31/12/22	218000		REOUVERTURE AU 01/01/23	367 925,06		
	31/12/22	281510		REOUVERTURE AU 01/01/23		19 327,00	
	31/12/22	281530		REOUVERTURE AU 01/01/23		57 404,60	
	31/12/22	281800		REOUVERTURE AU 01/01/23		171 509,39	
	31/12/22	310000		REOUVERTURE AU 01/01/23	3 711 528,20		
	31/12/22	401001	F02	REOUVERTURE AU 01/01/23		132 230,31	
	31/12/22	401001	F04	REOUVERTURE AU 01/01/23		4 995 167,32	
	31/12/22	401001	F23	REOUVERTURE AU 01/01/23		0,25	
	31/12/22	404001	00X00	REOUVERTURE AU 01/01/23	0,01		
101300-Capital appelé et Versé ->(CRD=2 000 000,00)					Total (39)	13 103 056,42	13 103 056,42
Détail Ecritures Centralisateur Modèles de saisie Comptes Plan std Vérificateur					Ecriture: JRO-1-1		
COMPTES: 101300 -Capital appelé et Versé Solde Crédit=2 000 000,00					COMPTES:		

Source: Internal document.

2.3.2. PC PAIE

a sophisticated payroll software specifically designed to streamline and manage all aspects of employee compensation. It excels in creating detailed salary bulletins, managing holidays and absences, and handling social and tax returns. With its powerful configuration capabilities, PCPAIE can adapt to even the most complex payroll scenarios, making it suitable for businesses of all sizes and industries.

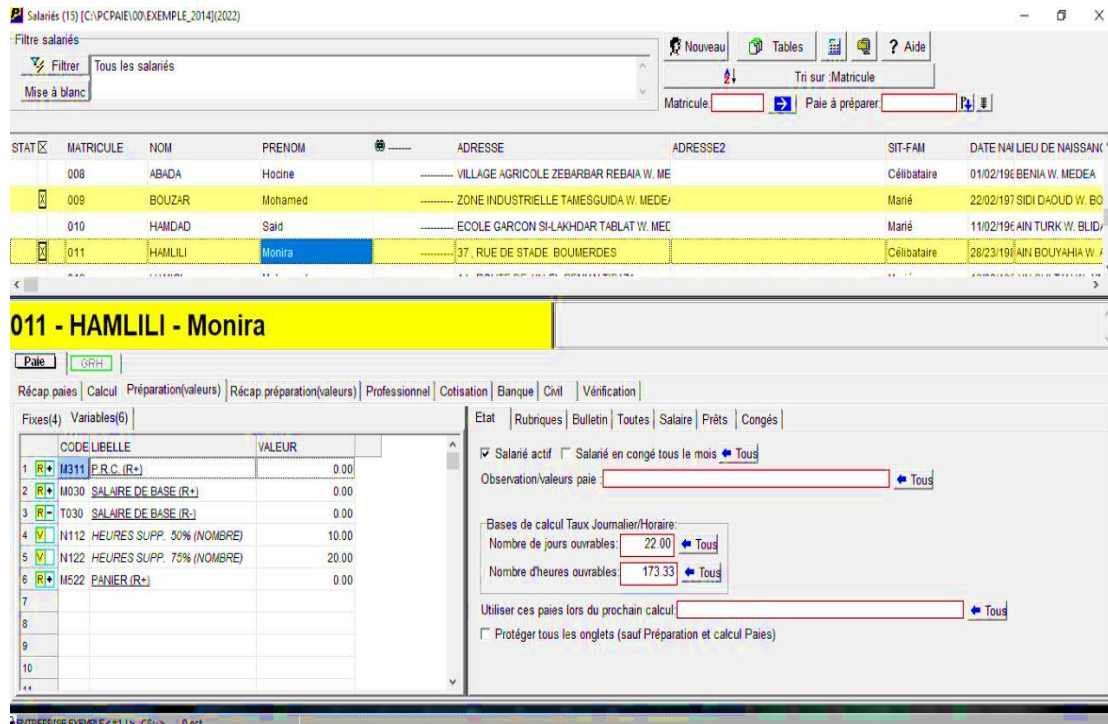
❖ Advantages:

- Automation of payment procedures save time and reduces the risk of errors;
- Aggregation of information and easy access to employee data;
- Compliance with legal obligations regarding remuneration and social statements.

❖ Disadvantage:

- Software purchase and maintenance costs;
- A possibility of computer malfunction that could cause delays in pay processing.

Figure 11: employee payroll management system.



Source : internal document.

2.3.3. El Bassit :

a tool designed to help accounting firms manage their daily operations, coordinate accounting activities, coordinate financial information, and ensure compliance with tax and accounting requirements. Designed to simplify the daily operations of accounting firms.

El Bassit streamlines accounting operations, consolidates financial data, and ensures compliance with tax and accounting standards.

❖ Advantages:

- Implement accounting actions to save time and improve processes;
- Integrate financial and accounting information for easy collaboration;
- Security Protect sensitive information and prioritize privacy. Monitoring financial performance, providing detailed reports and analysing data for strategic decisions;
- Compliance with current tax and accounting standards to fulfil legal obligations.

❖ Disadvantage:

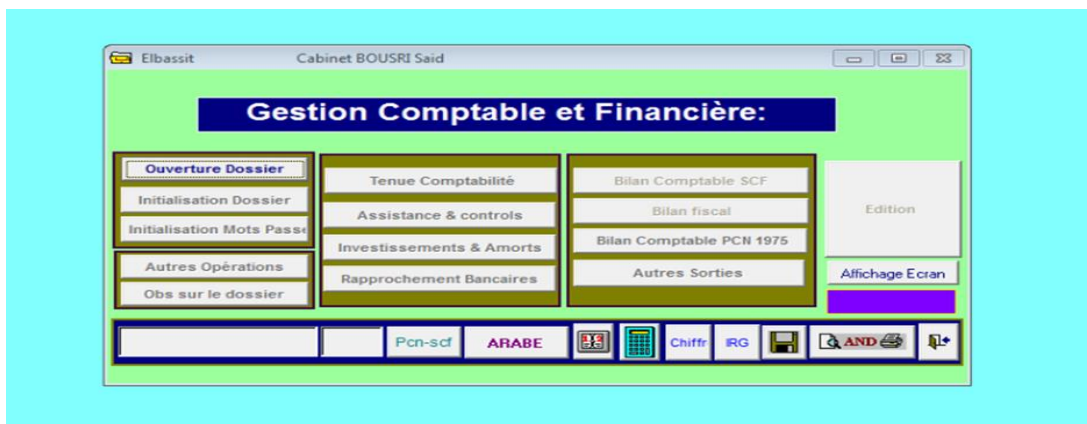
- Initial purchase price and installation;
- Regular maintenance is required to ensure its safety;
- Customization limitations despite available options;
- A possibility of computer malfunction that could cause delays in pay processing.

Figure 12: Interface represents payroll and personnel management.



Source: Internal document

Figure 13: Interface represents Accounting and financial management.



Source: Internal document

2.4. Tele declaration websites:

2.4.1. Jibayatic:

The new fiscal administration portal of Algeria offers filing services of taxes and remote payments. It was developed for the taxpayers within the Large Enterprise Department (DGE) and is seen as one of the critical building blocks of the continuous improvement process.

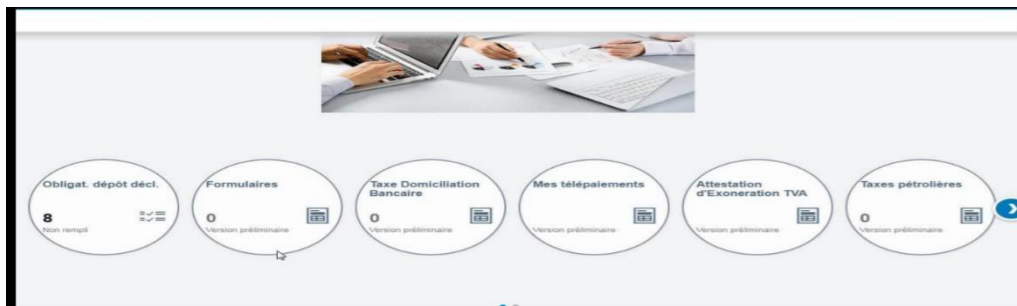
❖ Advantages:

- The ability to do business with the Main Tax Administration at home;
- Availability of tax administration 24/7;
- Providing up-to-date information on their taxes, as well as their taxes;
- Availability of posted announcements and discussions on the Internet;
- Negotiating tax credit;
- Request a tax certificate;
- Processing returns (authority returns, authorized reductions, etc.);
- Request for tax benefits.

❖ Disadvantage:

- Increased complexity by adding online steps disrupt streamlined process;
- despite charging a lot of money, the system does not even provide confirmation of receipt;
- In the event of an error, there is no possibility of correction, even if it occurs before the deadline;
- The Jibayatic system does not provide online password recovery in case of forgetting or repeating errors that cause it to be blocked.

Figure 14: Jibayatic tele-declaration website interface.



Source : Internal document

2.4.2. Tele-declaration CNAS :

It is a digital platform available through the official website of the Caisse: www.cnas.dz,

It allows employers to fulfil their obligations remotely without having to visit the Caisse's offices. The platform offers various services, including:

- Declaration of annual social security contribution bases;
- Declaration of employee movements;
- Annual declaration of salaries and employees;
- Remote payment of contributions via E-Payment and E-Banking services.;
- Consultation, download, and authentication of social security update certificates;
- Request for registration and affiliation of employees;
- Consultation and download of employee affiliation certificates;
- Request for the Chifa card for employees;
- Verification of annual declarations;
- Request for a payment schedule for dues;
- Monitoring the employer's status with the Caisse;
- Submission of transfer orders and debit notices to confirm account-to-account transfers;
- Remote submission of cash transfer statements.

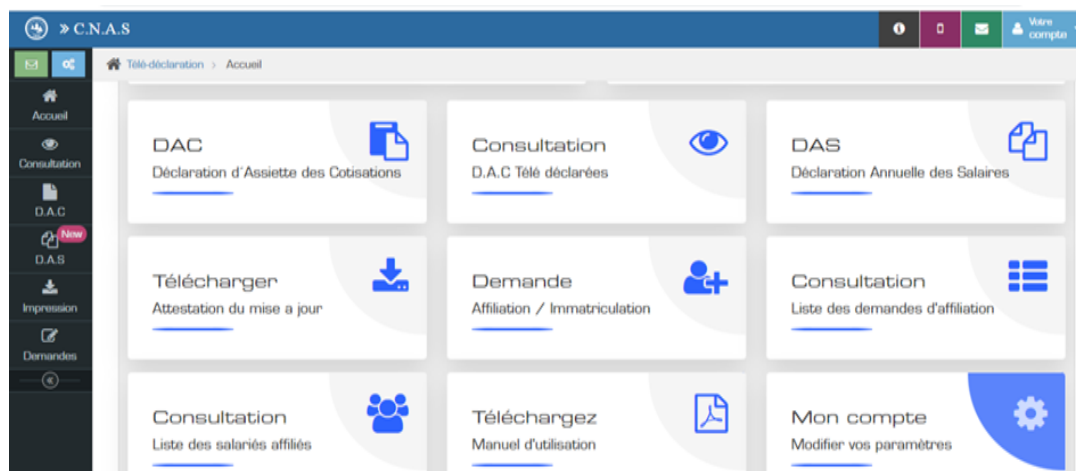
❖ Advantages:

- The CNAS publishing website simplifies the process of filing social notices by allowing companies to complete and submit them electronically;
- Using the CNAS reporting platform reduces the likelihood of errors in advertising by using automatic data validation;
- Forum provides the opportunity to follow the payment of social contributions and obtain information about the payment time and amount.

❖ Disadvantage:

- Administering the CNAS reporting site can be difficult for users without computer skills, which may require additional training;
- Problems connecting to the Internet or using the website may cause delays in reporting, which may impact business operations;
- It is important to ensure the confidentiality of sensitive information of employees and companies when using the CNAS reporting website, as it may pose a risk in the event of a security breach (unauthorized access).

Figure 15: CNAS tele-declaration website interface.



Source : Internal document

2.5. Communication tools :

2.5.1. Email:

a vital professional communication tool utilized within firms, primarily for engaging with prominent entities such as large companies. Its primary functions include facilitating the exchange of invoices, coordinating bank transfers, and posing queries to the firm. Additionally, emails serve as a crucial means of documentation, capable of providing evidence in cases of misunderstanding or disputes between the firm and its clients.

❖ Advantages:

- Email provides quick and easy communication with customers and colleagues;
- Communication monitoring is carried out via e-mail, allowing discussions and decision-making processes to be followed;
- Email can be used to assign tasks, schedule and organize meetings, making it easier to manage tasks in the office;
- Email can be accessed at any time and from any internet-connected device, making it easy to stay in touch outside of work;

❖ Disadvantage:

- Receiving too many emails can cause information overload and make it difficult to manage priorities;
- Email is vulnerable to phishing and privacy attacks that can compromise data security.
- In the case/event of server failure or connection problems, email may be disrupted and cause communication disruptions;
- Email management can take up a lot of time and distract employees from more important work that needs communication.

2.5.2. WhatsApp and Viber:

WhatsApp and Viber are commonly utilized by firms to send financial documents and communicate with clients. These platforms, though considered informal social media tools, are particularly favoured for interactions with individual clients who are part of a partial system. Firms leverage the user-friendly features of WhatsApp and Viber, such as voice messaging, to explain complex financial matters in a straightforward and accessible manner. Additionally, the simplicity and widespread familiarity of these applications enhance the overall communication experience, making it easier for clients to understand and engage with the firm.

❖ Advantages:

- They enable fast and effective communication by offering the ability to share messages in real time;
- Easy application to use even for users who are not familiar with technology. The ability to share files, photos and text via WhatsApp makes sharing information easier;
- They provide the option to create chat groups to communicate with many people at the same time, which is useful for project management.

❖ **Disadvantage:**

- They may pose a data privacy issue as messages can be stored on remote servers and intercepted;
- Frequent notifications can be distracting and distract users;
- They are vulnerable to hacking attacks and malware that can compromise the security of transmitted data;
- They are not designed for business use, which may limit some important aspects of business management in an accounting firm;
- Does not offer built-in storage for messages; This can make it difficult to track.

2.5.3. Facebook:

a widely used social media application that firms leverage for various professional purposes. Companies use Facebook to share posts aimed at capturing the attention of clients and colleagues, particularly regarding updates on new financial laws. It is also a platform where firms announce job openings, seeking new employees to join their teams. Additionally, Facebook serves as a medium for posing questions about unclear matters and offering suggestions, fostering a space for interactive engagement and communication within the professional community

❖ **Advantages:**

- Expands employee networks by offering ways to connect with customers, partners, and industry peers;
- Using Facebook, companies can showcase their services, spread industry information, and communicate with customers;
- Forums help offices connect with local communities, share accounting advice, and present themselves as sources of information.

❖ **Disadvantage:**

- Disclosure of financial assets or customer information on Facebook may lead to privacy and security risks;
- Maintaining a professional presence on Facebook requires time and dedication, which can distract from important accounting responsibilities;
- Negative comments or reviews on the Facebook office page can negatively affect its reputation, which requires careful attention.

Figure 16: Publication from B&B Facebook account.



Source: According to the official Facebook account of the firm.

2.6. Website:

A website is a critical tool for B&B firms, enabling them to define and market their services effectively. Through their website, these firms provide detailed information about their offerings, enhancing their visibility and appeal to potential clients. Moreover, the website facilitates online meetings, allowing clients to voice complaints and receive proposed solutions from the firm. This functionality not only improves customer service but also reduces the pressure on firm employees by streamlining the complaint resolution process and making it more efficient.

❖ Advantages:

- It increases the company's visibility and attracts new customers;
- In fact, more and more people are using the Internet to find professional services, and a well-represented website can help you stand out from the competition;
- The site then makes it easy to contact regular customers. Users can find useful information online, submit documents online, and ask questions via the contact form. This saves time and improves customer relations;
- The website can also help strengthen the accounting firm's credibility;

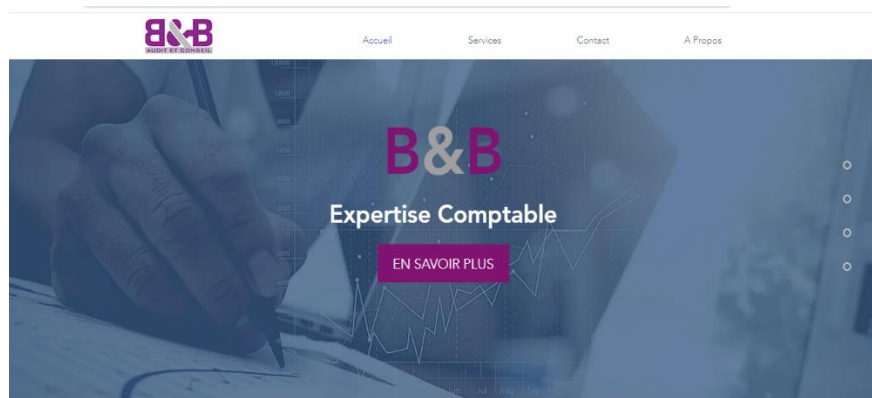
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- A well-designed and professional website leaves a good impression of the company and reassures customers of the quality service offered.

❖ Disadvantage:

- Managing a website takes time and resources, it needs to update content regularly, respond to customer requests, monitor SEO, and more;
- This can be time consuming for accounting firms that do not have the necessary resources;
- With the rise of online accounting firms, online competition is becoming increasingly fierce. That's why it's important to stand out and deliver good content to attract and retain customers;
- The website is vulnerable to cyber-attacks, hacking or data theft. Therefore, it is important to take adequate security measures to protect sensitive customer information.

Figure 17: Website B&B.



Source: According to the official website of B&B: <http://bb-audit-conseil.com/>

2.7. Google Maps

B&B firms strive to keep their information updated on Google Maps so that clients can easily find their location. They also pay close attention to the monthly statistical reports provided by Google Maps, which include data on the number of calls, website visits, route requests, and consultations of their Google Maps listings.

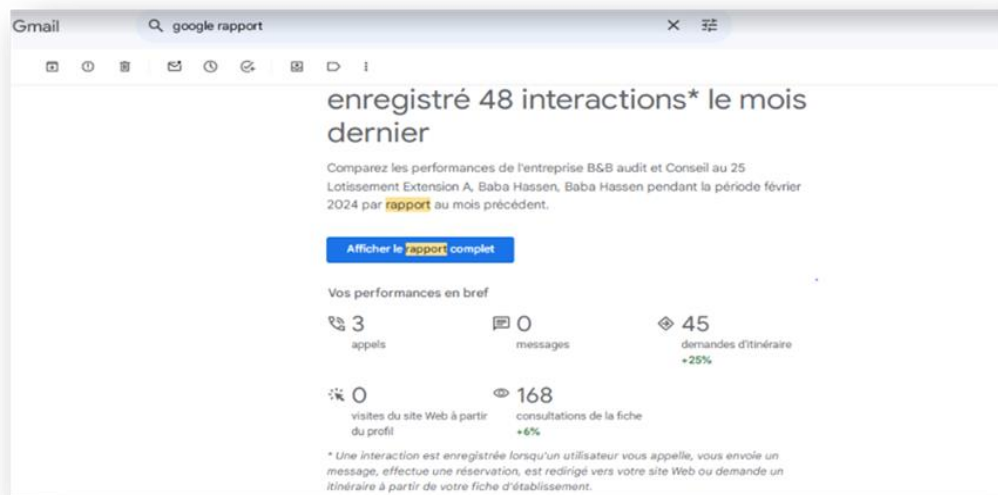
❖ Advantages:

- Google Maps makes the job easier by helping to find customers, partners, or contacts more accurately;
- The app offers complete routes, including walking, cycling, car or public transport options, which can be useful when planning business trips;

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- Google Maps provides accurate location information such as opening hours, user reviews, photos, phone numbers, etc., which can be useful for planning meetings or visits;
 - The ability to share firm's location with employees or customers in real time can simplify planning or operations.
- ❖ **Disadvantage:**
- Need of internet connection to get most out of Google Maps; This may cause problems in poor network or wireless areas;
 - Heavy use of Google Maps can cause the usage of a lot of mobile data, which can be expensive for users with limited plans;
 - Frequent updating of the app can sometimes break its functionality or take some time to adapt to new features.

Figure 18: Monthly report Interface from Google Maps.



Source: Internal document.

3. B&B's employees Expectations for Digital Development in Firms

Before delving into the specific expectations of employees, it's crucial to grasp the challenges faced by firms, the director of B&B firm has highlighted several significant challenges they face in their operations within the Algerian market.

The firm struggles with an overwhelming amount of paperwork and frequent bugs in the Algerian tele declaration system, leading to inefficiencies and delays. Additionally, a high volume of client visits disrupts employee productivity, while clients often delay the submission of their financial documents, causing further backlogs. The firm also deals with recurring issues

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of mixing up client documents. To collect documents, B&B relies on various communication tools such as email, Viber, and WhatsApp.

However, this reliance on multiple platforms often results in messages getting mixed up or lost among the thousands received daily, the employee's expectations regarding digital development within their firms include:

- Implementation of the latest technologies related to electronic archiving and invoicing by using the most advanced solutions based on cloud storage and blockchain technology. Employees will expect to see their processes work in a much more automated way with the help of these new technologies that will provide better security, accessibility, and reliability of document management and electronic transactions.
- A strong Customer Relationship Management (CRM) system is expected by the employees to manage and keep client interactions organized within the firm. A strong CRM system puts all client information in one place where it can be accessed by the employees who need it. This centralized database gives way to comprehensive tracking of interactions with clients, keeping leads in check, and maintaining detailed records of the history of each client.
- The benefits from the implementation of an e-payment system for fees are fundamental to both clients and firms. For a client, e-payment is easy, quick, and safe to pay fees without necessarily making personal visits or handling cash. The more convenient payment will increase the level of client satisfaction and loyalty since it reduces the hassle and saves time, for Firms are able to smoothen the process of financial transactions with the load of administrative tasks in terms of processing payments.
- Key among them is the improvement of the Algerian tele-declaration system to be more user-friendly, reliable, and efficient. A few of them are: first, it should be developed with a very simplified and intuitive interface, it should contain robust monitoring and diagnostic tools that are very rapid in identifying and resolving technical issues and optimizing the system to make it lightweight and efficient will improve its performance.
- Audit Mission Organization and Reporting Platform Enhanced by AI helps to streamline the audit process, and generates reports for each case through AI assistance. This innovative tool significantly reduces time spent on audits and enhances the workflow of auditors.
- Analyze data with Power BI to extract several key performance indicators important for the optimal performance of the firm., enhance decision-making.

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In the final analysis, the firms in Algeria realize the importance of digitalization and therefore make an effort to implement digital tools in operations. Nevertheless, change is slow and thus states a cautious approach to change. Although the advantages are well known, more needs to be done in order to fast-track the speed of digital evolution within the firms.

Section 02: Presentation of the study and discussion of the results

In this final section, we will complement the results of the walkthrough interview described in the first section by examining the chosen methodological approach and the selected data collection method. This approach enabled us to test the hypotheses by surveying a broad target group on the subject, ensuring that the results are representative of reality.

1. Research Methodology:

In order to address our research problem, which is: How has the liberal accounting profession been improved by digitalization? we have opted for two complementary studies to ensure reliable results: a qualitative study (section 01) and a quantitative questionnaire. Using a questionnaire offers several benefits in this case: it allows for a wide reach and efficient data collection from a large number of participants, enabling statistical analysis to identify patterns and trends. It provides specific insights through targeted questions and helps in hypothesis testing.

1.1. Research Objectives:

the main objectives of this study are:

- Identify the digital technologies adopted by independent accounting firms;
- To understand the perspectives of the employees of the firm regarding each tool, especially the digital ones;
- To comprehend the influence of digitalization on accounting practices;
- Examine the evolution of required skills and the transformations of the traditional activities of the profession.
- Understand the issues and obstacles faced by professionals in this context of digitalization.
- To ascertain whether they encounter challenges that our software can address.
- To understand the criteria, they use when purchasing software similar to ours.

1.2. Sample Construction:

We have chosen the non-probabilistic convenience sampling method, which allows us to obtain an approximate or estimated knowledge.

❖ Presentation of the sample:

The target population of this study comprises accounting professionals working independently in various firms in Algeria, ranging from experienced accountants to those with less experience. This includes:

- Certified Public Accountants
- Statutory Auditors

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- Certified Accountants
- Accounting Assistants
- Data Entry Clerks

We aimed to expand our sample to encompass a diverse range of perspectives, ensuring that our results are both reliable and representative of reality.

❖ Main selection criteria for the sample:

To ensure that our study captures a comprehensive and representative set of data, we carefully selected our sample based on two main criteria, the first one is the status of independent professional (self-employed or independent practice) and the second criteria is the geographic location (distribution across the Algerian territory).

This target population will provide a representative view of the impact of digitalization on the independent accounting profession in Algeria, taking into account the diversity of profiles, structures and practice contexts.

❖ Determination of the sample size:

Given that we have opted for a non-probabilistic method, we have deliberately chosen a population of 80 professionals.

2. Data collection tool: Questionnaire

2.1. Questionnaire Development:

A questionnaire is a tool used in surveys to collect information from industry professionals. It is a form containing a series of questions that are asked to respondents in order to collect data on the subject of our study.

❖ Types of Questions:

There are several types of questions that can be used in a questionnaire. The choice of question types depends on the information we seek to collect. Therefore, we have opted for the following types:

- **Closed-ended questions:** are a type of question that provides respondents with predefined response options to choose from.
- **Multiple-choice questions (MCQs):** are a type of closed-ended question that presents respondents with several answer options, from which they must select the one that best matches their response.
- **Dichotomous questions:** provides only two possible answers: "yes" or "no,".
- **Rating scale questions:** are designed to gather responses by asking participants to rate their opinions, experiences, or preferences on a predefined scale.

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2.2. Questionnaire distribution:

We constructed our questionnaire using Google Forms, and then we distributed it online through social media platforms (Facebook and LinkedIn) as well as to some professional email addresses we found on the ONCA website, aiming to obtain a maximum number of responses. Here is the link of the questionnaire form:

<https://docs.google.com/forms/d/e/1FAIpQLSeRZMecUETt3A5SNII4Tko9ISAr7SdjtFlaxpco-1p00S14bg/viewform?vc=0&c=0&w=1&flr=0>

2.3. Questionnaire Content:

As previously outlined in the introduction of this chapter, we structured our questionnaire into two distinct parts: one dedicated to our practical study and the other focused on our market study.

The initial phase of the questionnaire involved identifying the respondents for both parts.

Part 01, which pertains to the practical study, comprises three phases:

- **First phase:** exploring the impact of digitalization on the quality of accounting practices;
- **Second phase:** examining the changes in accountant skills in the era of digitalization;
- **Third phase:** identifying the obstacles encountered in the development of the accounting profession.

On the other hand, **Part 02** of the questionnaire, dedicated to the market study, consists of three phases too:

- **First phase:** investigating the methods of work within the firm;
- **Second phase:** gathering perspectives on software used to manage clients;
- **Third phase:** examining the criteria used when selecting software for use in their firms.

Utilizing two parts with distinct objectives within a single questionnaire allowed us to save time by efficiently gathering diverse sets of data simultaneously and enabled us to safeguard our software idea by incorporating superficial questions.

3. Data Analysis:

To analyze the results of our questionnaire, we have chosen to use the SPSS software, which is a leading tool in the field of statistics. This software offers a wide variety of analysis techniques.

For our study, we used the flat sorting method. "This is the simplest method, it treats each question separately, which will allow us to analyze and count the responses to each question and calculate their weight as a percentage."

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Following the analysis of the responses obtained during our questionnaire survey, we arrived at the following results:

3.1. The initial phase of the questionnaire involved identifying the respondents:

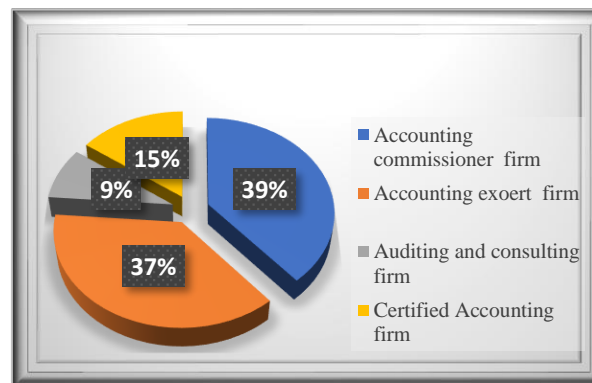
Q1: what kind of firm do you work for?

Table 9: The type of firm to which our respondent belongs.

	Effective	Percentage%
Accounting commissioner firm	31	38.8%
Accounting expert firm	30	37.5%
Auditing and consulting firm	7	8.8%
Certified Accounting firm	12	15.0%
Total	80	100%

Source: Established by researchers using SPSS

Graph 1: The type of firm to which our respondent belongs.



Source: Established by researchers using EXCEL.

❖ Interpretation and analyses of the Results Presented in table 9:

➤ **Observations:** the data presented in table 9: how's the distribution of the sample by the type of firm the respondents work for. The key conclusions that can be drawn are as follows:

- The majority of respondents (38.8%) work in accounting commissioner firm, this indicates that this type of firm is well-represented in the sample;
- Accounting expert firm come in second, with 37.5% of the respondents. This suggests that accounting firms also have a significant presence in the sample;
- Certified Accounting firm make up 15% of the sample, placing them in third position;
- Finally, audit and consulting firms have the lowest representation, with only 8.8% of the respondents.

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- **Comment:** Overall, it can be seen that the sample is dominated by accounting commissioner firms and, accounting expert firm which together account for nearly three-quarters of the respondents. This implies that these two types of firms are the most prominent in the sector being studied.

This distribution of the sample by firm type provides valuable context for interpreting the subsequent survey results. It highlights the areas of the accounting profession that are most strongly represented, which is crucial for understanding the perspectives and experiences reflected in the data.

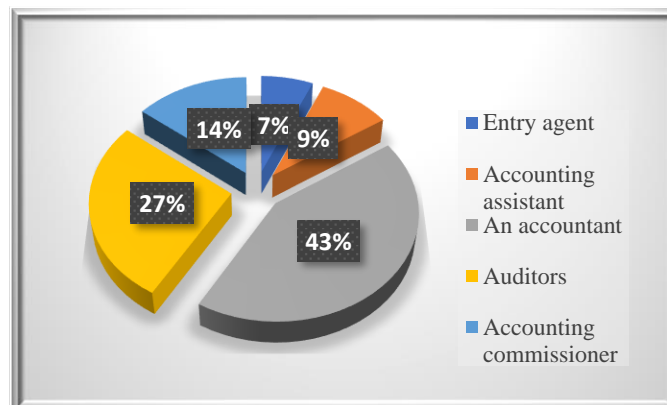
Q2: What is your position within the firm?

Table 10: The position our respondents hold.

	Effective	Percentage %
Entry agent	5	6.3%
Accounting assistant	7	8.8%
An accountant	33	41.3%
Auditors	21	26.3%
Accounting commissioner	11	13.8%
Total	80	100%

Source: Established by researchers using SPSS

Graph 2: the position our respondents hold.



Source: Established by researchers using EXCEL.

❖ Interpretation and analyses of the Results Presented in table 10:

- **Observations:** table 10 presents the distribution of the respondents according to their position within the company. The analysis of these results allows us to make the following observations:

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- The majority of the respondents (41.3%) hold the position of accountant. This indicates that this function is predominant in the sample studied.
 - Auditors represent the second largest proportion, with 26.3% of the respondents. This suggests that this function is also very present in the companies in the sample.
 - Certified public accountants (commissaires aux comptes) constitute 13.8% of the sample, placing them in third position.
 - Accounting assistants (aides comptables) represent 8.8% of the respondents, ranking fourth.
 - Data entry clerks (agents de saisie) only account for 6.3% of the sample, placing them in the second-to-last position.
 - Finally, the smallest proportion is that of certified public accountants (experts-comptables) with only 3.8% of the respondents.
- **Comment:** we can deduce that the sample is primarily composed of accountants, who represent more than 40% of the respondents. This likely reflects the importance of this function within the companies studied. Auditors also constitute a significant part of the sample, underscoring their important role in these organizations.

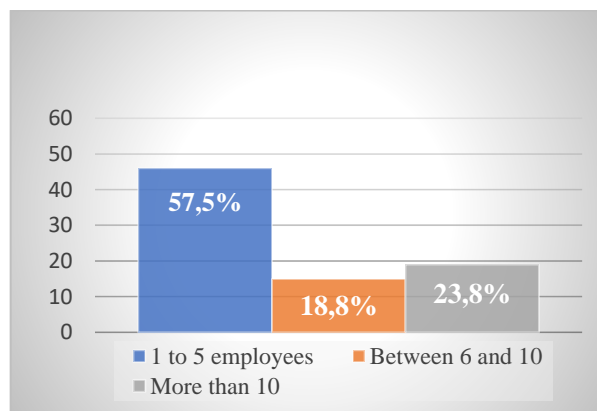
Q3: How many members do you have in your firm?

Table 11: The total employee count at the respondent's firm.

	Effective	Percentage%
1 to 5 employees	46	57.5%
Between 6 and 10	15	18.8%
More than 10	19	23.8%
Total	80	100%

Source: Established by researchers using SPSS

Graph 3: The total employee count at the respondent's firm.



Source: Established by researchers using EXCEL

❖ Interpretation and analyses of the Results Presented in table11:

- **Observations:** table 11 presents the distribution of the respondents according to the number of employees in their office. The analysis of these data allows us to make the following observations:
 - The majority of respondents (57.5%) work in offices with 1 to 5 employees. This is by far the largest category in the sample.
 - The second most represented category is that of offices with more than 10 employees, with 23.8% of the respondents.
 - Finally, offices with 6 to 10 employees represent the smallest proportion, at 18.8%.
- **Comment:** Based on these results, we can deduce the following:
 - Most of the respondents work in small structures, with a small staff ranging from 1 to 5 employees.
 - A significant proportion (nearly a quarter) work, however, in larger offices, with more than 10 employees.
 - Medium-sized structures (6 to 10 employees) are the least represented in the sample.
 - This distribution suggests that the sample is mainly composed of small companies, with some larger-scale structures. This could reflect the general structure of the sector being studied.

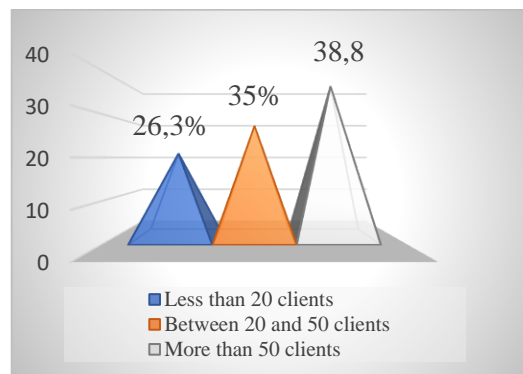
Q4: How many clients do you have in the firm?

Table 12: The total client count at the respondent's firm.

	Effective	Percentage%
Less than 20 clients	21	26.3%
Between 20 and 50 clients	28	35.0%
More than 50 clients	38	38.8%
Total	80	100.0%

Source: Established by researchers using SPSS.

Graph 4: The total client count at the respondent's firm.



Source: Established by researchers using EXCEL

❖ **Interpretation and analyses of the Results Presented in table12:**

- **Observations:** Table 12 presents the distribution of the respondents according to the number of clients served in their office. The analysis of these data allows us to make the following observations:
 - The largest proportion of respondents (38.8%) work for offices with more than 50 clients. This is the most represented category;
 - The second most significant category is that of offices with 20 to 50 clients, with 35% of the respondents;
 - Finally, offices with less than 20 clients represent the smallest proportion, at 26.3%.
- **Comment:** Based on these results, we can deduce that:
 - The majority of respondents work for structures that manage a significant client portfolio, with more than 50 clients.
 - A substantial proportion (35%) also work for medium-sized offices, with a number of clients between 20 and 50.
 - The smallest structures, with less than 20 clients, are the least represented in the sample.

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This distribution suggests that the sample is primarily composed of medium to large-sized companies in terms of clientele, which may reflect the general structure of the sector being studied. The smaller structures seem to be less represented.

3.2- part 01: practical study

3.2.1-First phase: exploring the impact of digitalization on the quality of accounting practices:

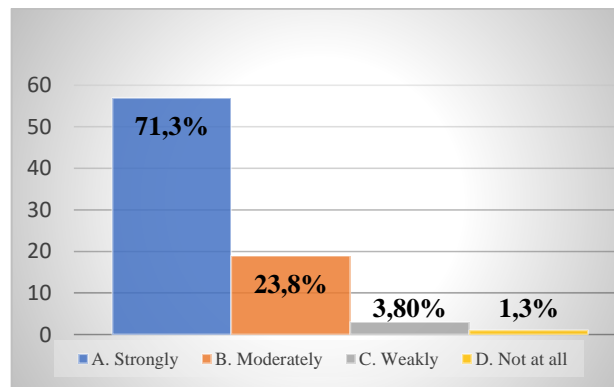
Q5: In what ways do you think digital technologies improve the efficiency of accounting operations?

Table 13: Digital Technology's Impact on Accounting Efficiency.

	Effective	Percentage%
A. Strongly	57	71.3%
B. Moderately	19	23.8%
C. Weakly	3	3.8%
D. Not at all	1	1.3%
Total	80	100%

Source: Established by researchers using SPSS

Graph 5: Digital Technology's Impact on Accounting Efficiency.



Source: Established by researchers using EXCEL

❖ Interpretation and analyses of the Results Presented in table 13:

- **Observations:** Table 13 shows the extent to which the respondents think that digital technologies contribute to improving the efficiency of accounting processes. The analysis of these data allows us to make the following observations:
- The vast majority of respondents (71.3%) believe that digital technologies "strongly" improve the efficiency of accounting processes. This is the most frequent response;
 - 23.8% of respondents consider that the improvement is "moderate";

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- Only 3.8% of respondents think that the impact of technologies is "weak" on the efficiency of processes;
 - Finally, a tiny proportion (1.3%) believe that technologies do not improve accounting efficiency "at all".
- **Comment:** From these results, we can deduce that:
- A very large majority of the professionals in the sample (over 70%) recognize that digital technologies contribute positively, whether strongly or moderately, to improving the efficiency of accounting processes;
 - Only a very small fraction of the respondents seems skeptical about the real impact of technologies on the efficiency of their activity.

In conclusion, these results suggest that the respondents have a very favorable perception of the contribution of digital technologies in improving accounting processes, with a large majority considering this impact as "strong".

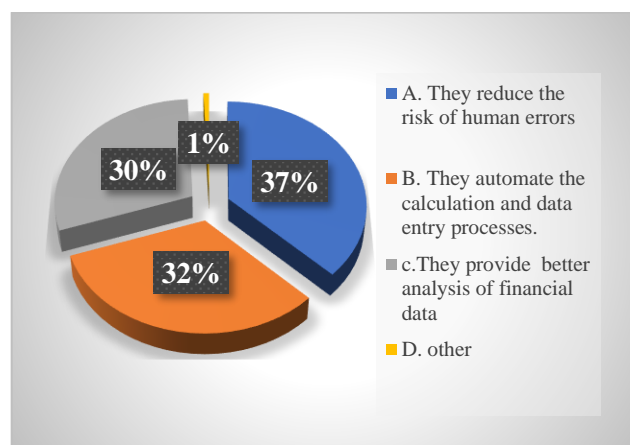
Q6: How do digital technologies contribute to the accuracy of accounting operations?

Table 14: Enhancing Accounting Accuracy through Digital Technologies.

	Number of iterations	Percentage%
A. They reduce the risk of human errors	53	37.3%
B. They automate the calculation and data entry processes.	46	32.4%
C. They provide better analysis of financial data	42	29.6%
D. other	1	0.7%
Total	142	100%

Source: Established by researchers using SPSS

Graph 6: Enhancing Accounting Accuracy through Digital Technologies.



Source: Established by researchers using EXCEL.

❖ **Interpretation and analyses of the Results Presented in table 14:**

- **Observations:** Table 14 shows, how digital technologies contribute to the accuracy of accounting operations. The analysis of these data allows us to make the following observations:
 - The main contribution identified is the reduction of human error risks, cited by 37.3% of the respondents;
 - The second most important contribution is the automation of data calculation and entry processes, mentioned by 32.4% of the respondents;
 - Finally, 29.6% of the respondents believe that digital technologies provide better analysis of financial information;
 - A very small proportion (0.7%) mentioned other unspecified contributions.
- **Comment:** From these results, we can deduce that:
 - The respondents primarily perceive digital technologies as a means of reducing the risk of human errors in accounting processes;
 - The automation of calculation and data entry tasks is also recognized as an important contribution of the technologies.;
 - The improvement of financial data analysis, although mentioned, is considered less of a priority than the first two aspects.

In conclusion, these results indicate that the respondents see digital technologies as a crucial tool for improving the accuracy and reliability of accounting operations, primarily by reducing human errors and automating certain processes

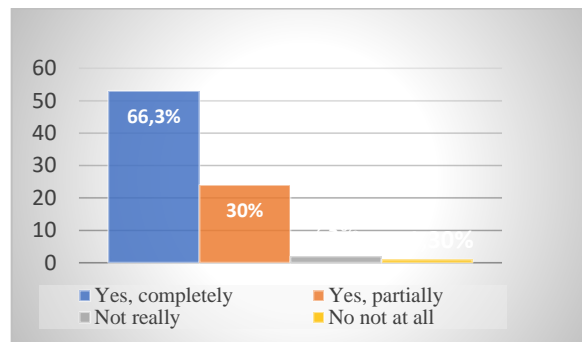
Q7: Do you agree that digitalization enables better traceability of accounting operations?

Table 15: Perception of Digitalization's Effectiveness in Enhancing Accounting Traceability.

	Effective	Percentage%
Yes, completely	53	66.3%
Yes, partially	24	30.0%
Not really	2	2.5%
No not at all	1	1.3%
Total	80	100%

Source: Established by researchers using SPSS

Graph 7: Perception of Digitalization's Effectiveness in Enhancing Accounting Traceability.



Source: Established by researchers using EXCEL

❖ **Interpretation and analyses of the Results Presented in table 15:**

- **Observations:** table 15 shows the extent to which the respondents agree with the idea that digitalization allows for better monitoring of accounting operations. The analysis of these data allows us to make the following observations:
 - An overwhelming majority of respondents (66.3%) are "completely" in agreement with this statement. This is the most frequent response;
 - 30% of the respondents are "partly" in agreement with this idea;
 - Only 2.5% of the respondents are "not really" in agreement;
 - Finally, a very small proportion (1.3%) are "not at all" in agreement with the fact that digitalization improves the monitoring of accounting operations.
- **Comment:** From these results, we can deduce that:
 - A very large majority of the professionals in the sample (over60%) recognize the benefits of digitalization for the monitoring of accounting operations, whether completely or partially;
 - Only an infinitesimal fraction of the respondents seems skeptical about the positive impact of digitalization on accounting monitoring.

In conclusion, these results suggest a very strong consensus among the respondents regarding the advantages of digitalization to improve the monitoring and control of accounting operations. The vast majority consider this contribution as "complete.

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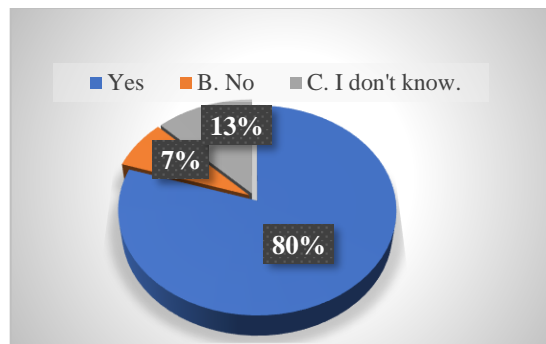
Q8: Do you think that the digitalization of the accounting profession in Algeria could improve the transparency of accounting practices?

Table 16: Perception of Digitalization's Impact on Accounting Transparency in Algeria.

	Effective	Percentage%
Yes	64	80.0%
B. No	6	7.5%
C. I don't know.	10	12.5%
Total	80	100.0%

Source: Established by researchers using SPSS

Graph 8: Perception of Digitalization's Impact on Accounting Transparency in Algeria.



Source: Established by researchers using EXCEL

❖ Interpretation and analyses of the Results Presented in table 16:

- **Observations:** According to the respondents, can the digitalization of the accounting profession in Algeria improve the financial transparency of companies?

Based on the information provided in table 16, we can make the following observations:

- 80% of the respondents answered "Yes", which represents the largest proportion;
 - 12.5% answered "I don't know";
 - 7.5% answered "No".
- **Comment:** From these results, we can deduce that:
 - The vast majority of respondents (80%) believe that the digitalization of the accounting profession in Algeria is likely to improve the financial transparency of companies;
 - A relatively small proportion (12.5%) is unsure about this effect;

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- Only a small part (7.5%) does not believe that digitalization will lead to better financial transparency.

Overall, these results show that most respondents are optimistic about the impact of the digitalization of the accounting profession on improving the financial transparency of companies in Algeria. This reflects their conviction of the importance of the digital transformation in this field

3.2.2-Second phase: examining the changes in accountant skills in the era of digitalization:

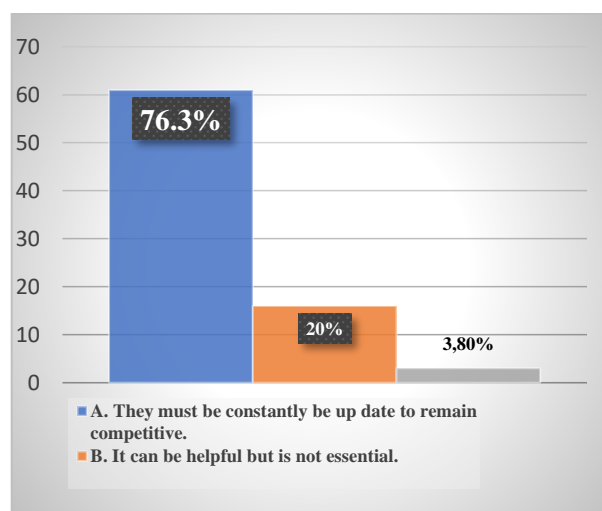
Q9: To what extent do you think accountants need to stay up-to-date with the latest trends in digitalization?

Table 17: Importance of Accountants Keeping Up with Digitalization Trends.

	Effective	Percentage%
A. They must be constantly be up date to remain competitive.	61	76.3%
B. It can be helpful but is not essential.	16	20.0%
C. It doesn't matter to their work.	3	3.8%
Total	80	100.0%

Source: Established by researchers using SPSS

Graph 9: Importance of Accountants Keeping Up with Digitalization Trends.



Source: Established by researchers using EXCEL

❖ Interpretation and analyses of the Results Presented in table 17:

- **Observations:** According to the respondents, to what extent do accountants need to follow the latest trends in digitalization?

Based on the information provided in table 17 we can make the following observations:

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- The majority of respondents (76.3%) believe that "They must be constantly up-to-date to remain competitive", which is the most frequent response;
- 20% of the respondents think that "It can be useful but is not essential";
- Only 3.8% consider that "It is not important for their work".

➤ **Comment:** From these results, we can deduce that:

- The vast majority of respondents (76.3%) believe that accountants must absolutely follow the latest trends in digitalization in order to remain competitive;
- A significant proportion (20%) think that it is rather a useful option but not essential;
- Only a very small fraction (3.8%) believe that digitalization is not important for the work of accountants.

Overall, these results show that the majority of respondents are convinced of the necessity for accountants to constantly stay informed about digital developments, in order to preserve their competitiveness.

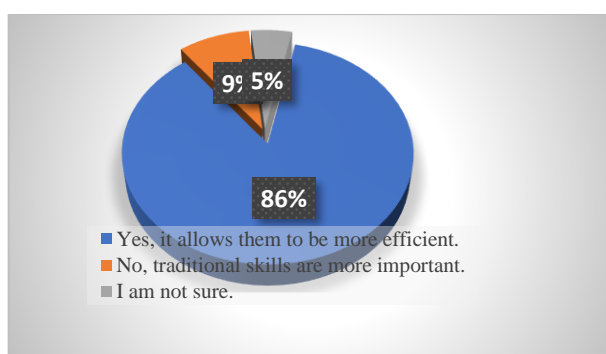
Q 10: Do you think that accountants who master digital technologies have an advantage over those who are not?

Table 18: Perception of Advantage for Accountants Proficient in Digital Technologies.

	Effective	Percentage%
Yes, it allows them to be more efficient.	69	86.3%
No, traditional skills are more important.	7	8,8%
I am not sure.	4	5%
Total	80	100%

Source: Established by researchers using SPSS

Graph 10: Perception of Advantage for Accountants Proficient in Digital Technologies.



Source: Established by researchers using EXCEL

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❖ Interpretation and analyses of the Results Presented in table 18:

- **Observations:** According to the respondents, do accountants with digital intelligence have an advantage over those who do not?

Based on the information provided in table 18, we can make the following observations:

- The vast majority of respondents (86.3%) answered "Yes, it allows them to be more efficient", which represents the largest proportion;
- 8.8% of the respondents indicated "No, traditional skills are more important";
- 3.5% answered "I'm not sure", which is the smallest proportion.

- **Comment:** From these results, we can deduce that:

- The vast majority of respondents (86.3%) believe that accountants with digital intelligence have an advantage because it allows them to be more efficient in their work;
- A small proportion (8.8%) think that traditional skills remain more important than digital capabilities;
- Only a very small part (5%) is not sure about the advantage that digital intelligence provides to accountants.

Overall, these results show that the vast majority of respondents are convinced that accountants with advanced digital skills benefit from a significant advantage in terms of professional efficiency compared to those who do not have them.

3.2.3-Third phase: identifying the obstacles encountered in the development of the accounting profession.

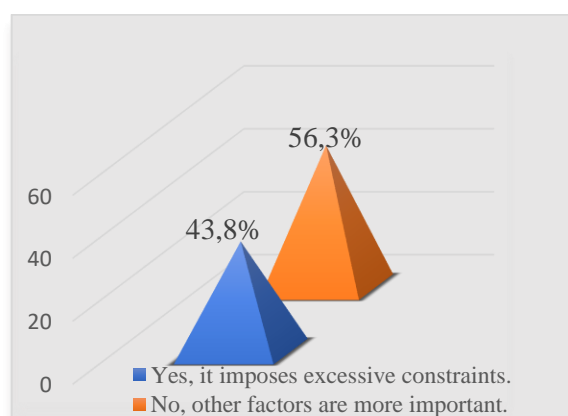
Q11: Do you consider that the Algerian finance law constitutes a major obstacle to the evolution of the accounting profession in Algeria?

Table 19: Respondents' views on Algerian Law as a major obstacle to Accounting Profession development.

	Effective	Percentage%
Yes, it imposes excessive constraints.	35	43.8%
No, other factors are more important.	45	56.3%
Total	80	100.0%

Source: Established by researchers using SPSS.

Graph 11: perspective of the respondent on the consideration of the Algerian law is the major obstacles of the development of accounting profession.



Source: Established by researchers using EXCEL

❖ Interpretation and analyses of the Results Presented in table 19:

- **Observations:** Analysis and interpretation of the results from table 19 according to the respondents, does the Algerian finance law pose a major obstacle to the development of the accounting profession in Algeria?
 - The largest proportion of respondents (56.3%) answered "No, other factors are more important";
 - 43.8% of respondents indicated "Yes, it imposes excessive constraints";
- **Comment:** Based on these results, we can infer that:
 - The majority of respondents (56.3%) do not consider the Algerian finance law to be a major obstacle to the development of the accounting profession. They believe that other factors are more significant;

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- However, a significant portion of respondents (43.8%) believe that this finance law imposes excessive constraints, thus hindering the advancement of the accounting profession in Algeria.

Overall, these results indicate that opinions are divided on the impact of the Algerian finance law on the development of the accounting profession. While the majority does not see it as a major obstacle, a substantial number of respondents view it as a significant impediment.

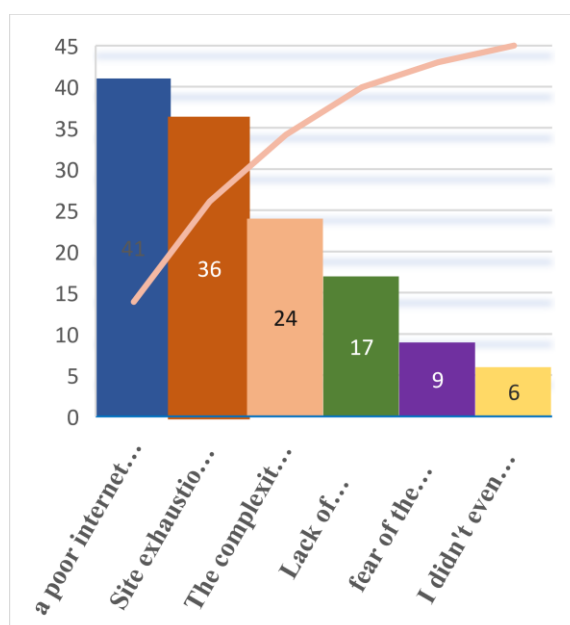
Q12: What are the reasons preventing you from using the Jibayatic e-payment?

Table 20: Reasons Preventing Respondents from Using Digital Tools.

	number of iterations	Percentage %
a poor internet connection	41	30.8%
The complexity of the site.	24	18.0%
fear of the Unknown	9	6.8%
Lack of confidence.	17	12.8%
Site exhaustion and saturation	36	27.1%
I didn't even know this option was available	6	4.5%
TOTAL	133	100%

Source: Established by researchers using SPSS

Graph 12: Reasons Preventing Respondents from Using Digital Tools.



Source: Established by researchers using EXCEL

❖ Interpretation and analyses of the Results Presented in table 19:

➤ **Observations:** From table 19 the following observations can be made:

- The main reason is "poor Internet connection," cited by 30.8% of respondents;

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- The second most common reason is "site exhaustion and saturation," at 27.1%;
 - "Site complexity" ranks third with 18% of responses;
 - Next, "lack of trust" accounts for 12.8% of responses;
 - "Fear of the unknown" is mentioned by 6.8% of respondents;
 - Finally, "not knowing that this option was available" is the least common reason, at 4.5%.
- **Comment:** Based on these results, we can infer that:
- The primary obstacle to using electronic payments by respondents is the poor quality of the Internet connection;
 - Other factors related to user experience, such as site saturation and complexity, also play an important role;
 - Lack of trust and fear of the unknown appear to be less prevalent barriers;
 - Only a very small proportion are unaware that this payment option even exists.

Overall, these results show that the main obstacles are technical in nature, related to connectivity quality and the usability of online payment platforms.

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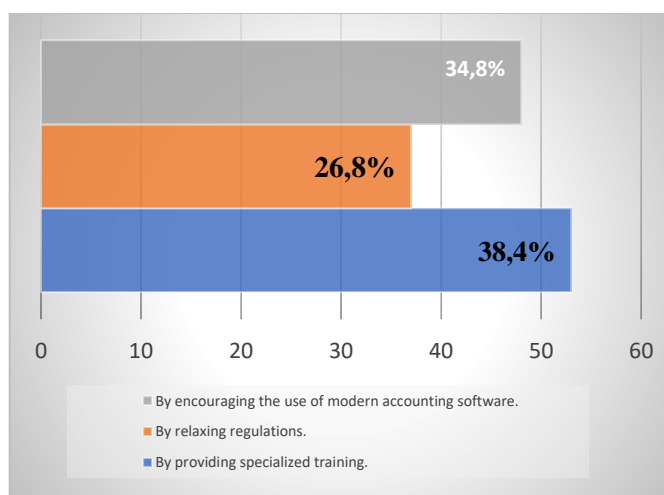
Q13: How could Algerian authorities support the digital transition in the accounting profession?

Table 21: Authorities' Support for Encouraging Digital Transition in the Accounting Profession: Respondent Perspectives.

	number of iterations	Percentage%
by providing specialized training.	53	38.4%
by relaxing regulations.	37	26.8%
by encouraging the use of modern accounting software.	48	34.8%
TOTAL	138	100.0%

Source: Established by researchers using SPSS

Graph 13: Authorities' Support for Encouraging Digital Transition in the Accounting Profession: Respondent Perspectives.



Source: Established by researchers using EXCEL

❖ Interpretation and analyses of the Results Presented in table 21:

➤ **Observations:** From table 21 the following observations can be made:

- The main measure identified is "Providing specialized training," cited by 38.4% of respondents;
- The second most important measure is "Encouraging the use of modern accounting software," mentioned by 34.8% of respondents;
- Finally, "Easing regulations" ranks third with 26.8% of responses.

➤ **Comment:** Based on these results, we can infer that:

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- According to the majority of respondents, the most important support that Algerian authorities can provide for the digital transition in the accounting profession is to offer specialized training;
- Encouraging the use of modern accounting software is also considered an important measure;
- Easing regulations is seen as the least prioritized measure compared to the previous two.

Overall, these results indicate that respondents consider training and the provision of suitable digital tools as the most important levers for supporting the digital transformation of the accounting profession in Algeria.

3.3- Part 2: Dedicated to the market study:

3.3.1-First phase: investigating the methods of work within the firm:

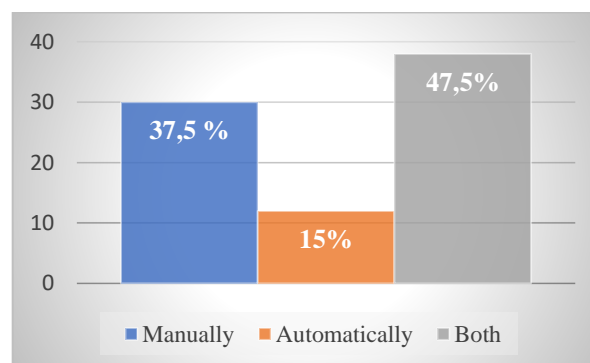
Q14: How do you handle archiving?

Table 22: Methods of Archiving Used by Respondents.

	Effective	Percentage%
Manually	30	37.5%
Automatically	12	15.0%
Both	38	47.5%
TOTAL	80	100%

Source: Established by researchers using SPSS

Graph 14: Methods of Archiving Used by Respondents.



Source: Established by researchers using EXCEL

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❖ Interpretation and analyses of the Results Presented in table 22:

- **Observations:** table 22 presents the distribution of the respondents according to how they archive documents in their company. The analysis of these data allows us to make the following observations:
- The majority of respondents (47.5%) indicate that they archive documents both manually and automatically. This is the most widespread method in the sample;
 - The second most used method is manual archiving, with 37.5% of the respondents;
 - Finally, automated archiving alone is used by only 15% of the respondents, the smallest proportion.
- **Comment:** From these results, we can deduce that:
- The majority of companies in the sample have adopted a hybrid approach, combining manual and automated archiving. This suggests a gradual transition towards a more digital management of archives;
 - However, manual archiving remains very widespread, used by nearly 40% of the respondents. This indicates that some companies have not yet fully digitized their archiving processes;
 - Automated archiving alone seems to be the least used method for the moment, probably reflecting a less advanced stage of digital transformation in certain structures.

the sample shows a diversity of archiving practices, between a traditional manual approach and a hybrid approach combining manual and automatic, with a predominance of the latter.

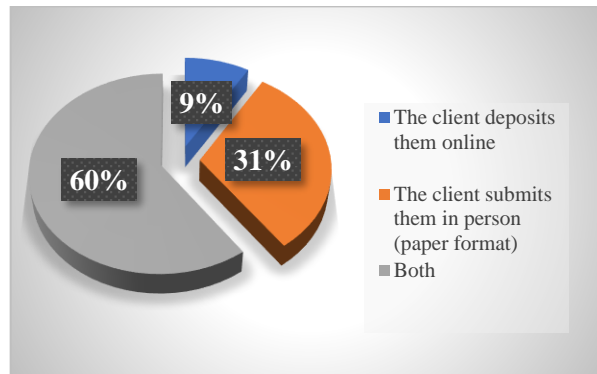
Q15: How do you manage to collect documents and financial information from your clients?

Table 23: Methods of Collecting Documents and Financial Information from Clients.

	Effective	Percentage%
The client deposits them online	7	8.8%
The client submits them in person (paper format)	25	31.3%
Both	48	60.0%
Total	80	100.%

Source: Established by researchers using SPSS

Graph 15: Methods of Collecting Documents and Financial Information from Clients.



Source: Established by researchers using EXCEL

❖ **Interpretation and analyses of the Results Presented in table 23:**

➤ **Observations:** table 23 presents the distribution of the respondents according to the means used to collect financial documents and information from their clients. The analysis of these data allows us to make the following observations:

- The majority of respondents (60%) indicate that their clients can transmit these documents both online and in person (physical format). This is the most widespread method;
- The second most used method is the physical transmission of documents, with 31.3% of respondents whose clients deposit the documents in person;
- Finally, online transmission alone concerns only 8.8% of the respondents, the smallest proportion.

➤ **Comment:** From these results, we can deduce that:

- The majority of companies in the sample have adopted a multichannel approach for collecting their clients' financial documents and information, accepting both paper and electronic formats;
- The traditional approach of physical transmission of documents is still widely used, probably reflecting ingrained habits in this sector of activity;
- Online collection alone seems to be still marginal, suggesting that many companies have not yet fully digitized their data collection processes.

In conclusion, the sample shows a gradual transition towards more diversified collection methods, with a predominance of the hybrid paper-digital approach

3.3.2-Second phase: gathering perspectives on software used to manage clients:

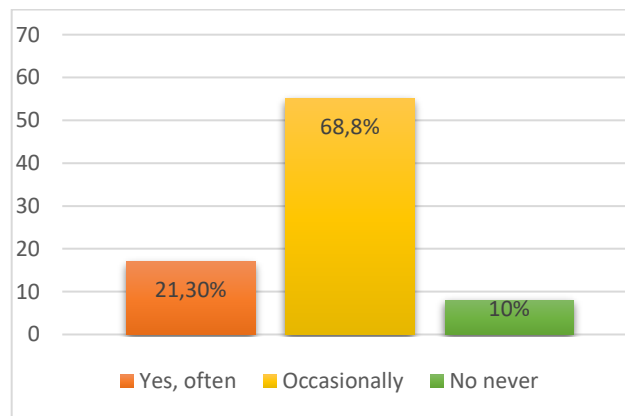
Q16: In the context of your professional activity, do you encounter difficulties in following up with your clients in your firm?

Table 24: Difficulties in Client Tracking Reported by Respondents.

	Effective	Percentage%
Yes, often	17	21.3%
Occasionally	55	68.8%
No never	8	10.0%
Total	80	100.0%

Source: Established by researchers using SPSS

Graph 16: Difficulties in Client Tracking Reported by Respondents.



Source: Established by researchers using EXCEL

❖ **Interpretation and analyses of the Results Presented in table 24:**

➤ **Observations:** table 24 shows the extent to which respondents encounter difficulties in following up with their clients in their office, within the framework of their professional activity. The analysis of these data allows us to make the following observations:

- The majority of respondents (68.8%) indicate that they encounter these client follow-up difficulties "sometimes". This is the most frequent response.;
- 21.3% of respondents say they face these difficulties "often";
- Finally, only 10% of respondents state that they "never" encounter difficulties in following up with their clients.

➤ **Comment:** From these results, we can deduce that:

- The vast majority of professionals in the sample (nearly 70%) face, to a more or less significant extent, difficulties in ensuring adequate follow-up with their clients within their office;

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- Although the situation is not generalized ("often"), it seems relatively frequent ("sometimes") for the majority of respondents;
- Only a small proportion manages to avoid this type of client follow-up problem in their daily activities.

In conclusion, these results suggest that client follow-up management represents an important challenge for many professionals in the sample, who must deal with it on a recurring basis, even if it is not systematic.

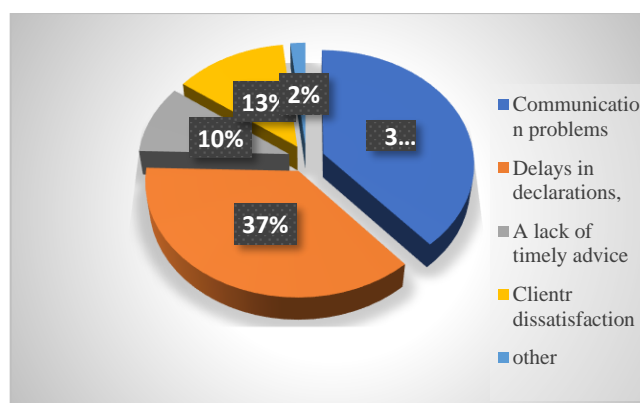
Q17: What kind of difficulties do you encounter?

Table 25: Types of Difficulties in Client Tracking Reported by Respondents.

	Number of iterations	Percentage %
Communication problems	44	38.6%
Delays in declarations,	42	36.8%
A lack of timely advice	11	9.6%
Clients' dissatisfaction	15	13.2%
other	2	1.8%
Total	114	100.0%

Source: Established by researchers using SPSS

Graph 17: Types of Difficulties in Client Tracking Reported by Respondents.



Source: Established by researchers using EXCEL

❖ Interpretation and analyses of the Results Presented in table 25:

- **Observations:** table 25 presents the main difficulties encountered by the respondents in the course of their professional activity. The analysis of these data allows us to make the following observations:
 - The main difficulty mentioned is related to communication problems, representing 38.6% of the responses;

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- The second most frequent difficulty concerns delay in filing declarations, with 36.8% of the responses;
 - Client dissatisfaction comes in third position, with 13.2% of the responses;
 - The lack of timely advice to clients is mentioned by 9.6% of the respondents;
 - Finally, other types of unspecified difficulties represent only 1.8% of the responses.
- **Comment:** From these results, we can deduce that:
- Communication problems with clients are the main difficulty encountered by the professionals in the sample;
 - Delays in tax and accounting declarations also represent a significant challenge for a substantial proportion of the respondents;
 - Client dissatisfaction and the lack of timely advice, although less frequent, are nevertheless notable difficulties.

In conclusion, these results indicate that the main challenges faced by the respondents are related to the quality of communication and the management of deadlines, essential elements in the provision of services to client.

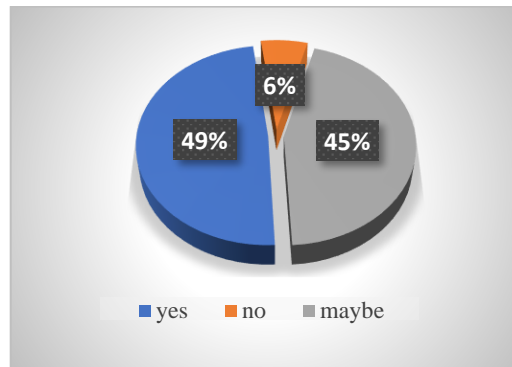
Q18: Do you think accounting firms will respond positively to the proposal of a firm management software?

Table 26: The measurement of the firm's employee acceptance of firm management software.

	Effective	Percentage
Yes	39	48,75%
No	5	6,3%
Maybe	36	45,00%
Total	80	100%

Source: Established by researchers using SPSS

Graph 18: The measurement of the firm's employee acceptance of firm management software.



Source: Established by researchers using EXCEL

❖ **Interpretation and analyses of the Results Presented in table 26:**

- **Observations:** The question concerned the respondents' perception of the favorable reaction that accounting firms might have to the proposal of a dedicated management platform for their business.
 - Nearly half of the respondents (48.75%) believe that firms will react favorably to this proposal. This result is encouraging and suggests an interesting market potential for launching such a platform. However, this optimistic vision should be tempered, as 45% of respondents are more cautious, anticipating a "maybe" favorable reaction from the firms.
 - Finally, only 6.3% of respondents anticipate an unfavorable reaction from the firms. Although a minority, this percentage is not negligible and highlights the existence of reluctance that will need to be taken into account in the launch strategy.
- **Comment:** Overall, the results reflect an interesting potential for launching a management platform for accounting firms, but also underline the need for a carefully designed adoption strategy, based on a good understanding of the profession's expectations and concerns.

3.3.3-Third phase: examining the criteria used when selecting software for use in their firms:

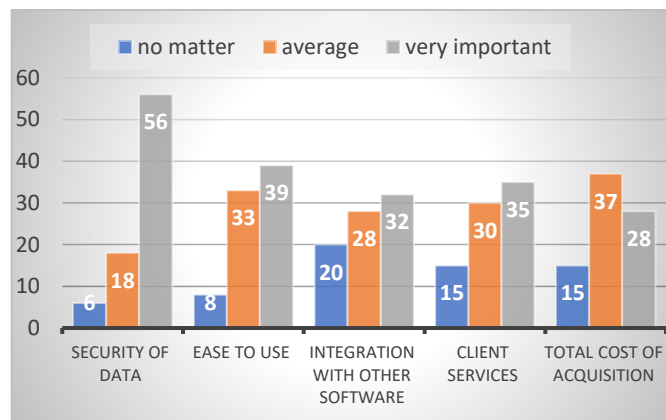
Q19: What is the most important criterion for you when choosing software for your firm

Table 27: Key criteria considered by firms in software selection process.

	No matter	Average	Very important	Total
Security of data	6	18	56	80
Ease to use	8	33	39	80
Integration with other software	20	28	32	80
Client services	15	30	35	80
Total cost of acquisition	15	37	28	80

Source: Established by researchers using SPSS

Graph 19: key criteria considered by firms in software selection process.



Source: Established by researchers using EXCEL

❖ **Interpretation and analyses of the Results Presented in table**

➤ **Observations:** From table 27 the following observations can be made

• **Security of data:**

- Data security is considered very important by the majority of respondents (56%), which is very positive. This is an essential criterion for any software tool or service.
- However, 24% of respondents consider it as "no matter" or only "average", which is quite high and shows that there are still efforts to be made to convince all users of the importance of data security.

• **Ease of use:**

- Ergonomics and ease of use are also very important criteria for 39% of respondents.

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- However, 41% consider them only as "average" or "no matter", which is quite high. This suggests that the user interface and user experience need to be improved to make the tool more intuitive and pleasant to use.
- **Integration with other software:**
 - Integration with other software is a more mitigated criterion, with 20% considering it as "no matter", 28% as "average" and 32% as "very important".
 - This shows that there are probably different needs among users, with some requiring strong integration and others not. It will likely be necessary to offer different levels of integration.
- **Client services:**
 - Client services are considered fairly important, with 35% of respondents rating them as "very important".
 - However, 45% consider them only as "average" or "no matter", which is quite high. This suggests that client services need to be improved to better meet user expectations.
- **Total cost of acquisition:**
 - Total cost of acquisition is seen as a fairly important criterion, with 37% of respondents rating it as "average" and 28% as "very important".
 - However, 15% consider it as "no matter", which is quite high. This shows that price is not the most important criterion for all users.
- **Comment:** these results highlight the key criteria for users, while also pointing out the areas where improvements would be beneficial. While data security and ease of use are seen as very important, some aspects such as integration with other software and client services still require efforts to better meet the diverse expectations of users. Total cost of acquisition, although important, is not the most decisive criterion for everyone. Overall, these data provide interesting avenues to guide the development and continuous improvement of the product in order to best adapt it to the needs of users.

Conclusion

At the end of this chapter, we focused our efforts on conducting an investigative study using walkthrough interviews with the B&B Audit and Advisory firm, which provided us with favorable responses. Subsequently, we expanded our scope by analyzing the data collected through an online questionnaire

The "walkthrough" interviews conducted at B&B Audit and Advisory provided a valuable overview of the company's technological environment, highlighting the current tools, employee needs, and their expectations for future digital developments. This information is crucial for guiding strategic decisions regarding technological development within the firm.

In addition to these interviews, we used a questionnaire to deepen and expand our sample to better understand the impact of digitalization on the liberal accounting profession. Accounting professionals emphasized the growing importance of digitalization in improving accounting practices, mentioning that accountants must stay up-to-date to continue working smoothly. They also highlighted the obstacles that hinder the adoption of digital development by Algerian firms, such as poor internet connectivity.

Furthermore, we leveraged the questionnaire to conduct a market study on the working methods within Algerian accounting firms. We concluded that the majority of firms use a hybrid option (online and paper format) to archive and collect documents from their clients. This study also measured our target market's acceptance of client management software, and the results showed an overwhelmingly positive response. Finally, we identified the criteria for selecting such software, with a particular emphasis on data security.

In summary, our research has highlighted the importance of digitalization for the performance of accounting firms when offering quality accounting practices. Digitalization not only contributes to client satisfaction and ease of work for employees, but it also plays a crucial role in the overall efficiency and competitiveness of accounting firms..

General Conclusion

General Conclusion

Digitalization has a significant impact on the accounting profession. On one hand, it has brought efficiency and productivity gains through the automation of repetitive tasks, and has allowed professionals to access financial data in real-time to improve their advisory services. However, these changes have also given rise to new client demands in terms of speed, transparency and personalization, forcing accountants to develop new skills, particularly in data analysis and cybersecurity. Moreover, the protection of confidential data has become a major priority.

The objective of this study was to analyze the data collected from professionals in the accounting profession. We examined and analyzed responses obtained from our survey questionnaire to better understand the challenges and opportunities they face. Here are the main results we obtained:

- Diversity of archiving practices, with a predominance of a hybrid approach, suggesting gradual but incomplete digitalization;
- Adoption of a multichannel approach for data collection, still largely combining paper and digital, indicating an incomplete digital transition;
- Majority of accounting professionals facing recurring client follow-up difficulties, a significant challenge for many firms;
- Main challenges related to client communication, declaration delays, and quality of advice, reflecting service and deadline management issues;
- Very broad recognition of the benefits of digital technologies for improving the efficiency of accounting processes;
- Minority of professionals consider the impact of regulations as a significant obstacle;
- Technical obstacles, related to internet connectivity and user experience, hinder the adoption of digital tools;
- Priority given to training and the use of modern accounting software to support digitalization.

Based on the results of the questionnaire analysis mentioned above, as well as the responses obtained during the "walkthroughs" interviews, we are able to confirm or refute the hypotheses established at the beginning of our study.

At the end of the evaluation of the hypotheses of our study, we are able to validate certain of two initial hypotheses while refuting the third one.

First, our results confirm the 1st and 2nd hypotheses, which are as follows:

General Conclusion

1st Hypothesis:

"Digital technologies make it possible to improve the quality of accounting profession ". this hypothesis has been confirmed ,digital technologies significantly enhance the quality of the accounting profession. Our hypothesis that digital advancements lead to improvements in this field is confirmed by the results of our questionnaire. We measured quality through key metrics such as efficiency, accuracy, traceability, and transparency. The data revealed that digital tools streamline accounting processes, reduce errors, ensure comprehensive audit trails, and increase the openness of financial information. These advancements not only improve the precision and reliability of accounting tasks but also foster greater trust and accountability within the profession.

2nd Hypothesis:

"Accountants must be up-to-date with the latest digitalization trends in order to be able to continue to practice their profession effectively".

This hypothesis has been confirmed. According to the responses from our questionnaire, an overwhelming majority of participants indicated that staying current with digitalization trends is essential for maintaining efficiency and competitiveness in their work. The respondents emphasized that continuous learning and adaptation to new technologies are crucial for effective practice in the accounting profession.

3rd hypothesis : "The Algerian finance law would be the only obstacle to the evolution of the accounting profession."

This hypothesis has been rejected. According to the results of our questionnaire, while respondents emphasized that the Algerian finance law does pose a challenge to the development of digitalization, it is not the only challenge. They also identified several other significant obstacles. For example, the e-payment website for declarations introduced by the Algerian government has not been widely adopted, as observed during our internship. The primary reasons include poor internet connectivity, site overload and saturation, lack of trust in these websites, and other issues. To address these challenges, the government should encourage accounting professionals to use such platforms by improving internet speed, ensuring website security through compensatory measures, providing user-friendly interfaces, and offering specialized training and instructions on how to use these digital tools effectively.

General Conclusion

The Recommendations:

After thoroughly analyzing the results of our study, we are able to formulate concrete recommendations to improve the implementation of digitalization in the accounting profession and aim to solve the problems or obstacles observed by professionals in the field. The recommendations are as follows:

- Encourage the gradual digitalization of archiving practices, by supporting the firms practicing the accounting profession in the implementation of hybrid solutions to complete digital solutions;
- Facilitate the transition to a fully dematerialized data collection, while supporting professionals in the appropriation of these new processes;
- Implement tools and training to help firms optimize the management and monitoring of their clients, in order to reduce the recurring difficulties encountered;
- Develop support and coaching programs to improve the communication skills, compliance with deadlines, and advisory services of professionals;
- Further promote the benefits of digital technologies to encourage broader adoption in accounting processes;
- Invest in improving the country's digital infrastructure, particularly internet connectivity, in order to overcome the main technical obstacles to the use of electronic payments;
- Implement training and subsidy programs to facilitate the acquisition of modern accounting software by firms, in addition to awareness-raising efforts.

In the course of our research, we noticed a lack of specialized resources and publications in the field of digitalization of the liberal accounting profession. This challenge prompted us to turn to recognized journals to gather the necessary information. This highlights the need to deepen investigations and expand the available knowledge on this relatively recent subject.

Other interesting avenues for research could include:

- The challenges of using new technologies in the accounting profession
- The role and skills of accounting professionals in a digital environment

In conclusion, the digitalization of the liberal accounting profession is an inevitable reality that requires constant adaptation of experts. Those who will be able to leverage technologies while preserving their expertise and professional integrity will be best positioned to meet the challenges of tomorrow and support organizations towards a successful digital future.

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Appendix

Appendix

Appendix 1: La fiabilité du SPSS.

Statistiques de fiabilité	
Alpha de Cronbach	Nombre d'éléments
0.533	13

Statistiques de total des éléments				
	Moyenne de l'échelle en cas de suppression d'un élément	Variance de l'échelle en cas de suppression d'un élément	Corrélation complète des éléments corrigés	Alpha de Cronbach en cas de suppression de l'élément
La phase introduction :	21.8125	13.420	-0.007	0.583
Quelle est votre poste au sein du cabinet	20.3750	11.275	0.243	0.507
Quel est le nombre d'employés dans votre cabinet ?	22.1500	12.585	0.195	0.516
Dans votre cabinet, combien avez-vous de client ?	21.6875	12.749	0.186	0.518
Comment faites-vous l'archivage ?	21.7125	12.764	0.128	0.536
Comment parvenez-vous à collecter les documents et les informations financières de vos clients ?	21.3000	12.289	0.378	0.477
Dans le cadre de votre activité professionnelle, Est-ce que vous rencontrez des difficultés pour suivre votre clientèle dans votre cabinet ?	21.9250	13.640	0.126	0.528
Dans quelle mesure pensez-vous que les technologies numériques améliorent l'efficacité des opérations comptables ?	22.4625	12.378	0.390	0.477
Êtes-vous d'accord que la digitalisation permet une meilleure traçabilité des opérations comptables ?	22.4250	12.450	0.384	0.480
Pensez-vous que la digitalisation de la profession comptable en Algérie pourrait améliorer la transparence financière des entreprises ?	22.4875	13.038	0.190	0.516
Dans quelle mesure pensez-vous que les comptables doivent se tenir au courant	22.5375	13.037	0.300	0.500

Appendix

des dernières tendances de la digitalisation ?				
Pensez-vous que les comptables qui maîtrisent les technologies numériques ont un avantage sur ceux qui ne le font pas ?	22.6250	13.402	0.216	0.514
Considérez-vous que la loi de finances algérienne constitue un obstacle majeur à l'évolution de la profession comptable en Algérie ?	22.2500	13.354	0.234	0.511

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