



Ministry of Higher Education and Scientific Research
University Kasdi Merbh Ouargla
Institute of Applied and technical sciences
Department of Management



Dissertation submitted to fulfill the requirement of Professional license
in Finance and Accounting

The Effectiveness of Cost Accounting As a Management Control tool

Case study SONATRACH*HBK*
During Februry20th, to Martch 06th, 2017

Directed by the student ZITOUNI Ache Fatma

Discussed in public at :11-05-2017

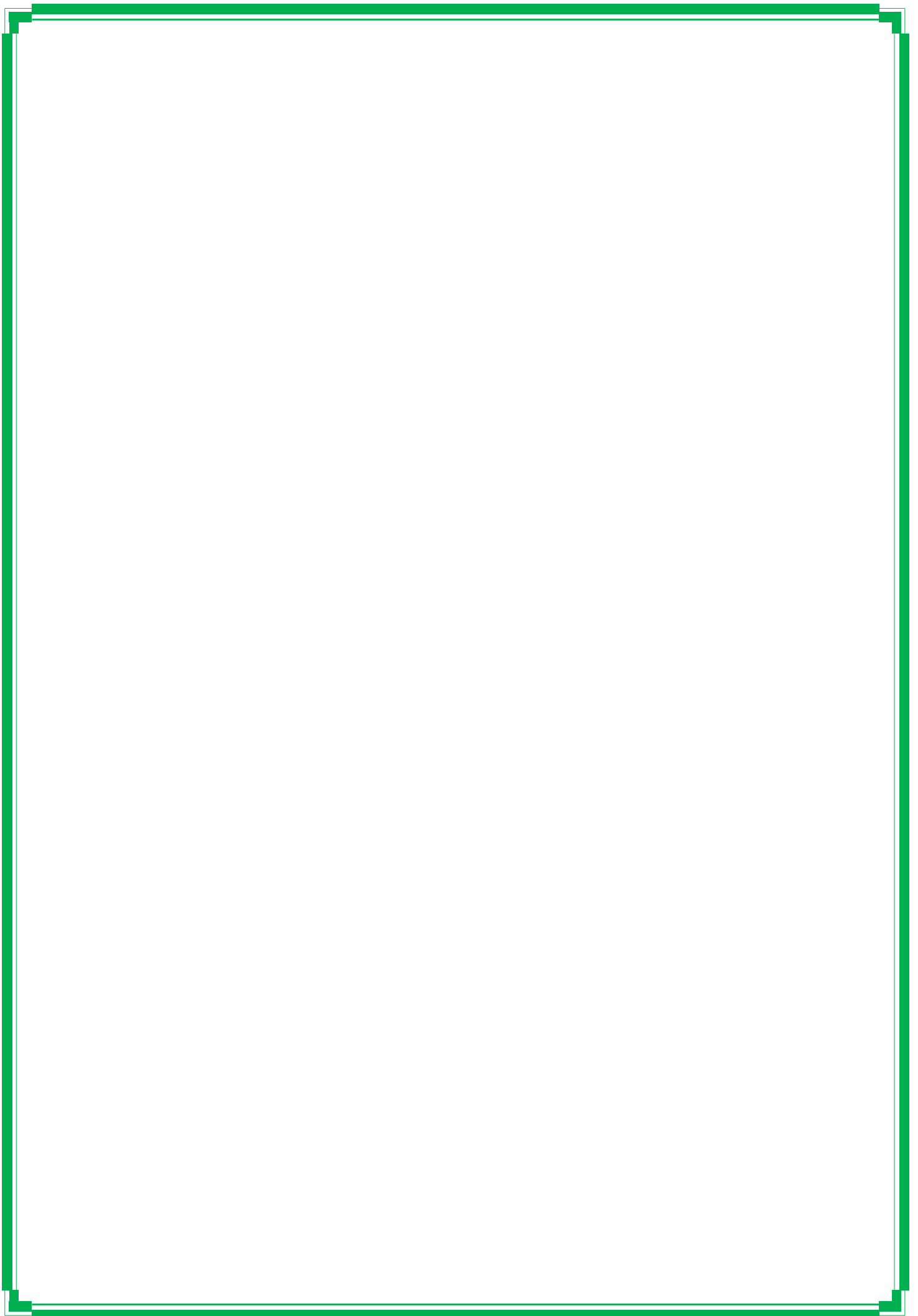
Member of the jury:

The Doctor: KHEMGHANI Bader Ezzamen.....President

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*At valiant, heart nothing impossible
A quiet conscience everything is accessible
When there is the thirst for learning
Good things come to those who wait for
When there is the desire to achieve a purpose
Everything becomes easy to get to our end
Despite the obstacles
In spite of the difficulties involved
Studies are above all
Our unique and unique asset
They represent the light of our existence
The bright star of our rejoicing
Like a flight of gyrfalms out of the natal charnel house
We start drunk with a heroic and brutal dream
Hoping for the next epic
A glorious and magical future
Wishing that the fruit of our efforts
Day and night, we will lead to flowery happiness
Today, gathered here with the juries,
We pray to God that this defense
Will be a sign of perseverance
And that we would be delighted
Through our honored work*



*I dedicate this thesis to my mother god bless her
souls*

*Affable, honorable, amiable: You represent for me the
Symbol of goodness par excellence, the source of tenderness and
The example of dedication which has not ceased to encourage me and
To pray for me.*

*Your prayer and your blessing have been of great help to me
To carry on my studies.*

*No dedication can be sufficiently
Express what you deserve for all the sacrifices you have
Ceased to give me since my birth, during my childhood
And even in adulthood.*

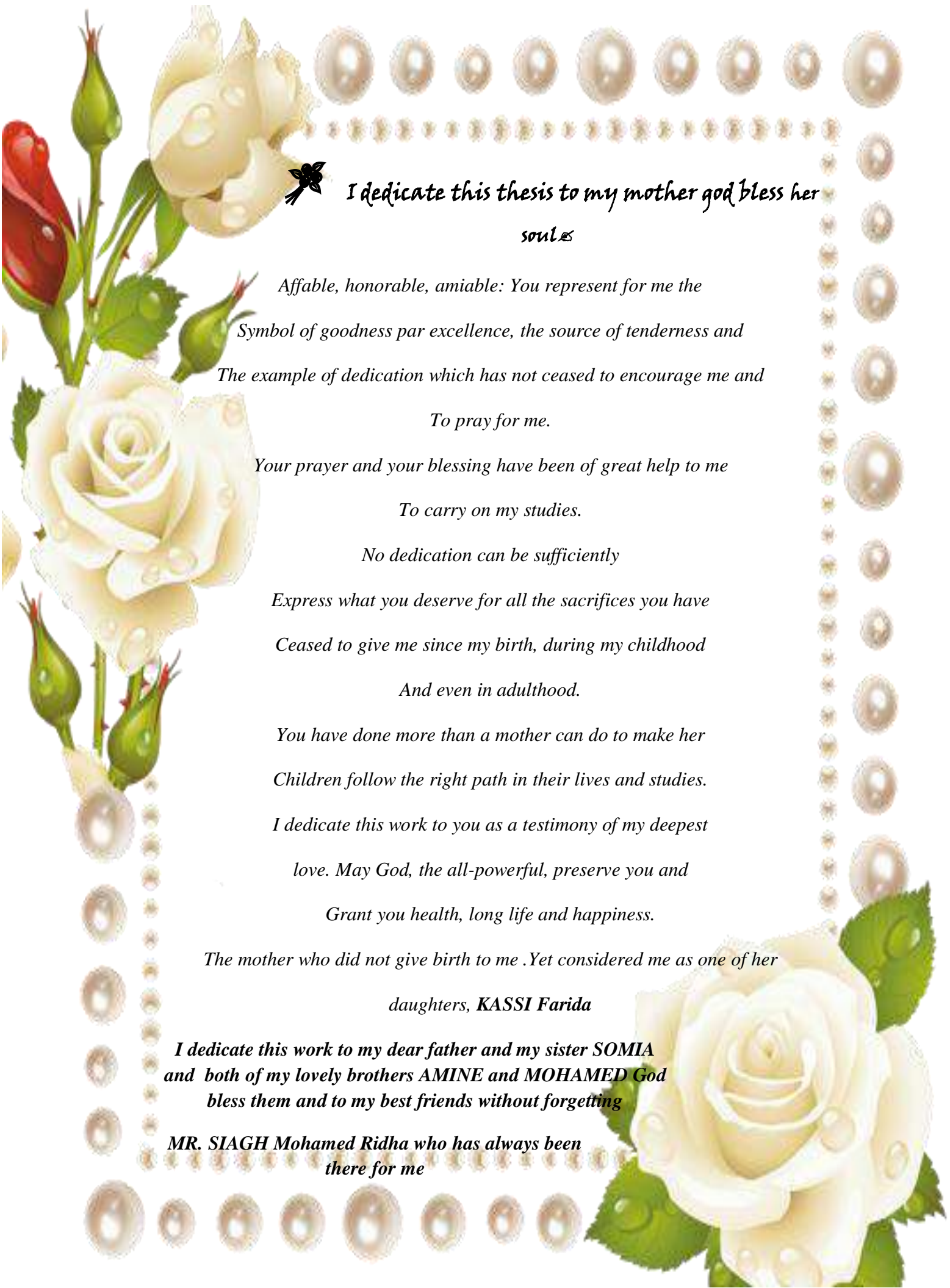
*You have done more than a mother can do to make her
Children follow the right path in their lives and studies.*

*I dedicate this work to you as a testimony of my deepest
love. May God, the all-powerful, preserve you and
Grant you health, long life and happiness.*

*The mother who did not give birth to me .Yet considered me as one of her
daughters, **KASSI Farida***

*I dedicate this work to my dear father and my sister **SOMIA**
and both of my lovely brothers **AMINE** and **MOHAMED** God
bless them and to my best friends without forgetting*

***MR. SIAGH Mohamed Ridha** who has always been
there for me*



A decorative border surrounds the page, featuring a string of pearls at the top and bottom, and a vertical string of pearls on the right side. On the left side, there are several roses, including a large white rose in the foreground and a red rose bud above it. The background is white.

ACKNOWLEDGEMENT

Before any development on this professional experience, it seems appropriate to start this report of internship with thanks, to those who taught me much during this course, and even to those who were kind enough to make this internship a very profitable moment. I would like to express my appreciation to the National Company SONATRACH-Amant Activity -Division Production - the HAUD-BERKAOUI regional management for allowing me to do my internship in finance and accounting divisions.

In particular, I would like to thank:

*My supervisor **Mr. Mohammed lamine CHERBI**
Mr. Mohammed Ridha SIAG H and, **Mr. FERRADJI**
Abbes, my mentors of training, who trained me and accompanied me throughout this professional experience with great patience and pedagogy. Finally, I would like to thank all the service employees for their advice during the course.*

THANKS

Résumé :

L'objectif de l'étude est une tentative de mettre en évidence le rôle de système comptable analytique dans le contrôle de gestion dans l'entreprise économique

Le système comptable est un moyen analytique et nécessaire pour organiser l'organisation des informations financières, économiques, légales et affectant l'intégrité financière de l'entreprise et l'individuelle, c'est aussi la technologie des techniques qui a permis le développement économique et une raison majeure à la gestion et au contrôle de gestion et identifier et étudier des coûts

La direction régionale de production « HAOUD BERKAOUI » de l'institution de système Strict, Sonatrach utilisant la comptabilité analytique est un système qui fournit les informations servant d'une base pour aider les gestionnaires dans la prise de décision, ce qui distingue le système comptable de l'analytique et d'autres systèmes d'information et d'autres, que des informations uniques non offertes n'importe quel système sont les seules, faisant le législateur à être influencé au caractère facultatif de l'au lieu de la nature obligatoire, pour le contenu d'informations secrètes liées à la stratégie de l'institution.

Mots clés : comptabilité analytique, contrôle de gestion, les outils de contrôle

ملخص:

يعتبر نظام المحاسبة التحليلية وسيلة ضرورية لترتيب وتنظيم المعلومات المالية والاقتصادية والقانونية التي تؤثر على الذمة المالية للفرد والمؤسسة وهي أيضا تقنية من التقنيات التي كان التطور الاقتصادي سببا رئيسيا في التسيير ومراقبة التسيير وتحديد دراستها.

وقد اتخذت المديرية الجهوية للإنتاج "حوض بركاوي" التابع لمؤسسة سوناطراك نظاما محكما وذلك باستعمال المحاسبة التحليلية، فهي نظام يوفر تصلح كقاعدة تساعد المسير في اتخاذ القرار، وما يميز نظام المحاسبة التحليلية عن غيره من أنظمة المعلومات الفرعية الأخرى، انه ينفرد بمعلومات لا يوفرها أي نظام الا هو، مما جعل المشرع ينحاز الى الطابع الاجباري لها بدلا من الطابع الاجباري، لما تحتويه من معلومات سرية تتعلق باستراتيجية المؤسسة.

والهدف من هذه الدراسة تسليط الضوء على دور النظام المحاسبية التحليلية في مراقبة التسيير في المؤسسة الاقتصادية سوناطراك قسم الانتاج "حوض بركاوي"

كلمات مفتاحية: محاسبة التحليلية، مراقبة التسيير، أدوات الرقابة

Abstract:

The cost accounting system is a necessary means to arrange and organize the financial, economic and legal information that affects the financial balance of the individual and the institution. It is also a technique that economic development has been a major factor in the management, control and identification of the management.

The Regional Directorate of Production of the Sonatrach Foundation, the "Barakaoui Foundation", has adopted an cost system. It is a system that provides a useful tool for decision-making. It distinguishes the cost accounting system from other sub-information systems. It is unique in information that is not provided by any system it is this, which makes the legislator biased to its optional nature rather than its compulsory nature, because it contains secret information about the institution's strategy

The objective of this study is to shed light on the role of the cost and accounting system in the administrative control of the economic institution SONATRACH production division HOUAD BERKAOUI

Keywords: cost and accounting, management control, control tools

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Liste of Abreviation and symboles

Symbole	Signification
ENAFOR	National company for drilling
ENSP	National well service company
ENTP	National company for well works
HRM	Hassi Rmel
HBK	Haoud Berkaoui
GT	Direction kassi etoul
TFT	Direction tifoui tibtour
QR	The actual quantity
QS	The standard quantity
PS	Standard price
PR	Real price
CS	Standard cost
CR	Real cost
BMM	Good the Movement Material
Tablana	Analytical Chart
Maitrana	Analytical Master

Introduction

Introduction

The evolution of appellations makes sense. For a long time, we have been talking about "industrial accounting" in France: from the nineteenth century until the fifties. Especially when, around the 1930s, the work of a commission created by the employers of the time, the General Study Committee for the Scientific Organization of Work (CEGOST, then CEGOS) Rational analysis of costs. Its structure will be integrated into the overall accounting system in 1942 by the first draft of the Chart of Accounts. That of 1947 will be renamed «cost accounting», hence separated from the general accounts. The designation will be maintained by the Plans of 1957 and 1982. It is only at the end of the eighties that there seems to be generalization of "management accounting", to which the National Council Of the accounts in the early nineties to revise the cost l accounting of the 1982 Plan. It should be noted, however, that the draft Plan.... cost accounting will disappear from the Chart of Accounts in 1999. It is therefore now recognized as proprietary to companies, outside the scope of standardization bodies.

The evolution of terms reflects the transformation of this system of numeration and valorization that the managers construct for their own needs, the modification of the uses that they make of it. In this way, it expresses an evolution of management practices. The analysis, a certain approach of cabinet give way to this specific form of action that is management. But the terms "management" and "management" express the same content. On the basis of the above, the following problem was posed:

❖ **What is the role of cost and accounting management as a management control tool in an economic enterprise SONATRACH “HOUAD BERKAOUI?**

To solve this problem, we worked on the elements that form the subject and we asked the following questions:

- **What is the cost accounting and management control?**
- **How do the processes of the control exercised by the analytical accounting**
- **What is the importance of this tool to control the functions managers in an economic company SONATRACH -HOUAD BERKAOUI?**
- **What is the purpose of using the cost accounting to control the managerial functions in the company SONATRACH -HOUAD BERKAOUI-?**

Reasons for choosing this theme:

I chose this subject according to the importance of the analytical accounting in the management control and to draw attention in this field and the various spells of use of the analytical accounting, according to this research one used cost accounting in an important part that is management control and decision making

The objective of the study:

- Explain the importance of cost accounting in an economic enterprise and define its role in management control and decision-making
- The contribution of the analytical accounting in the development of the national economy according to the increase of the economic and financial situation in the company.

The methodology followed:

In order to answer this problem, my methodology is to make a review of the extensive describe on the subject of cost accounting and management control; I chosed research paper not to carry out field study on this topic but rather to rely on those that have been done so far by researchers and translated into theses and articles This choice is motivated to perform This full-time thesis

The spatial and temporal boundaries of the study:

- February 20th ,2017 to Martch06th. 2017
- SONATRACH, Regional Direction- HAOUD BERKAOUI

Since the years of study in the same company and given the importance of the subject for a productive enterprise ,I saw that i should complet my case study in the same company

The segmentation of the study:

The subject of this study "the role of analytical accounting as a management control tool in an economic enterprise" which contains two main theoretical and practical parts and each part contains 3 chapters:

Chapter 1: definition of cost accounting and management control

Chapter 2: The role of cost accounting in management control in an economic enterprise

Chapter 3: practical part; the explanation of role of cost accounting in the control of the functions managers in «the company SONATRACH regional direction HOUAD BERKAOUI»

Chapter I

General Notions of Cost Accounting

Introduction

Accounting is a very old science, which aims at keeping records of various transactions. The accounting is considered essential for keeping records of all receipts and payments as well as that of the income and expenditures. Accounting can be broadly divided into three categories.

Financial Accounting, aims at finding out profit or losses of an accounting year as well as the assets and liabilities position, by recording various transactions in a systematic manner.

Cost Accounting helps the business to ascertain the cost of production/services offered by the organization and also provides valuable information for taking various decisions and also for cost control and cost reduction.

Management Accounting helps the managers to conduct the business in a more efficient manner.

The scope of management accounting is broader than that of cost accounting. In other words, it can be said that the management accounting can be considered as an extension of cost accounting. Management Accounting utilises the principles and practices of financial accounting and cost accounting in addition to other modern management techniques for efficient operation of a company. The main thrust in management accounting is towards determining policy and formulating plans to achieve desired objectives of management. Management Accounting makes corporate planning and strategies effective and meaningful.

1.1. Definition of Financial Accounting¹

Financial Accounting aims at finding the results of an accounting year in terms of profits or losses and assets and liabilities. In order to do this, it is essential to record various transactions in a systematic manner. Financial Accounting is defined as, ‘Art and science of classifying, analyzing and recording business transactions in a systematic manner in order to prepare a summary at the end of the year to find out the results of the concerned accounting year.’ The definition given above is self-explanatory, however for understanding clearly, the following terms are explained below;

A-Business transactions: A transaction means an activity; a business transaction means any activity, which creates some kind of legal relationship. For example, purchase and sale of goods, appointing an employee and paying his salary, payment of various expenses, purchase of assets etc.

B-Classification of transactions: Before recording any transaction, it is essential that it is to be classified. A transaction can be classified as cash transaction and credit transaction. Similarly, transactions of receiving income and payment of expenditure can be segregated. Even in case of expenditure, transactions involving revenue expenditure and capital expenditure can be segregated.

C-Recording of transactions: The essence of financial accounting is recording of transaction. In accounting language, recording of the transaction is known as entry. There are well defined rules for recording various transactions in books of accounts. As per the rules of financial accounting, each and every transaction is recorded at two places and hence it is called as ‘Double Entry’ system of accounting.

D- Summary of transactions: After recording all transactions, it is essential to prepare a summary of them so as to draw meaningful conclusions. The summary will help in finding out the Profit/Loss of a particular year and also ascertaining Assets and Liabilities on a particular date. In fact, the very purpose of financial accounting is to know the results of a particular year. From this angle, the process of preparing the summary is extremely important.

¹LECLERE Didier (2011), Cost Accounting, 5^{ème} Edition, Eyrolles et Editions d’organisation, Paris, Page 206.

2.2. Cost Accounting²:

As compared to the financial accounting, the focus of cost accounting is different. In the modern days of cutthroat competition, any business organization has to pay attention towards their cost of production. Computation of cost on scientific basis and thereafter cost control and cost reduction has become of paramount importance. Hence, it has become essential to study the basic principles and concepts of cost accounting. These are discussed in the subsequent paragraphs.

Cost: -Cost can be defined as the expenditure (actual or notional) incurred on or attributable to a given thing. It can also be described as the resources that have been sacrificed or must be sacrificed to attain a particular objective. In other words, cost is the amount of resources used for something which must be measured in terms of money. For example – Cost of preparing one cup of tea is the amount incurred on the elements like material, labor and other expenses; similarly, cost of offering any services like banking is the amount of expenditure for offering that service. Thus, cost of production or cost of service can be calculated by ascertaining the resources used for the production or services.

2.2.1 Costing: Costing may be defined as ‘the technique and process of ascertaining costs’. According to Weldon, ‘Costing is classifying, recording, allocation and appropriation of expenses for the determination of cost of products or services and for the presentation of suitably arranged data for the purpose of control and guidance of management. It includes the ascertainment of every order, job, contract, process, service units as may be appropriate. It deals with the cost of production, selling and distribution.

If we analyze the above definitions, it will be understood that costing is basically the procedure of ascertaining the costs. As mentioned above, for any business organization, ascertaining of costs is must and for this purpose, a scientific procedure should be followed. ‘Costing’ is precisely this procedure, which helps them to find out the costs of products or services.

2.2.2 Cost Accounting: Cost Accounting primarily deals with collection, analysis of relevant of cost data for interpretation and presentation for various problems of management. Cost accounting accounts for the cost of products, service or an operation. It is defined as, ‘the

²KINNEY Michael R., RAIBORN Cecily A. (2011), Cost accounting Foundations and Evolutions, 8th edition, South-Western Cengage learning, Mason / Ohio, page 91

establishment of budgets, standard costs and actual costs of operations, processes, activities or products and the analysis of variances, profitability or the social use of funds.

2.2.3 Cost Accountancy: Cost Accountancy is a broader term and is defined as, ‘the application of costing and cost accounting principles, methods and techniques to the science and art and practice of cost control and the ascertainment of profitability as well as presentation of information for the purpose of managerial decision making. If we analyze the above definition, the following points will emerge,

A. Cost accounting is basically application of the costing and cost accounting principles.

B. This application is with specific purpose and that is for the purpose of cost control, ascertainment of profitability and also for presentation of information to facilitate decision-making.

C. Cost accounting is a combination of art and science, it is a science as it has well defined rules and regulations, it is an art as application of any science requires art and it is a practice as it has to be applied on continuous basis and is not a one-time exercise.

3.1. Objectives of Cost Accounting:³

Objectives of Cost Accounting can be summarized as under

1. To ascertain the cost of production on per unit basis, for example, cost per kg, cost per meter, cost per liter, cost per ton etc.
2. Cost accounting helps in the determination of selling price. Cost accounting enables to determine the cost of production on a scientific basis and it helps to fix the selling price.
3. Cost accounting helps in cost control and cost reduction.
4. Ascertainment of division wise, activity wise and unit wise profitability becomes possible through cost accounting.
5. Cost accounting also helps in locating wastages, inefficiencies and other loopholes in the production processes/services offered.

³ 1-PLOWMAN Brian (2001), Activity based management: improving processes and profitability, Gower publishing company, Hampshire,p53.

6. Cost accounting helps in presentation of relevant data to the management, which helps in decision-making. Decision-making is one of the important functions of Management and it requires presentation of relevant data. Cost accounting enables presentation of relevant data in a systematic manner so that decision making becomes possible.

7. Cost accounting also helps in estimation of costs for the future.

3.2. Essentials of a good Costing system: For availing of maximum benefits, a good costing system should possess the following characteristics.

A. Costing system adopted in any organization should be suitable to its nature and size of the business and its information needs.

B. A costing system should be such that it is economical and the benefits derived from the same should be more than the cost of operating of the same.

C. Costing system should be simple to operate and understand. Unnecessary complications should be avoided.

D. Costing system should ensure proper system of accounting for material, labor and overheads and there should be proper classification made at the time of recording of the transaction itself.

E. Before designing a costing system, need and objectives of the system should be identified.

F. The costing system should ensure that the final aim of ascertaining of cost as accurately possible should be achieved.

4.1. Certain Important Terms: -It is necessary to understand certain important terms used in cost accounting.

A. Cost Center: -Cost Center is defined as, 'a production or service, function, activity or item of equipment whose costs may be attributed to cost units. A cost center is the smallest organizational sub unit for which separate cost allocation is attempted'. To put in simple words, a cost center is nothing but a location, person or item of equipment for which cost may be ascertained and used for the purpose of cost control. For example, a production department, stores department, sales department can be cost centers. Similarly, an item of equipment like a lathe, fork-lift, truck or delivery vehicle can be cost center, a person like sales manager can be a cost center. The main object of identifying a cost center is to facilitate collection of costs so that further accounting will be easy. A cost center can be either personal or impersonal,

similarly it can be a production cost center or service cost center. A cost center in which a specific process or a continuous sequence of operations is carried out is known as Process Cost Center.

B. Profit Center: Profit Center is defined as, 'a segment of the business entity by which both revenues are received and expenses are incurred or controlled'. (CEMA) A profit center is any sub unit of an organization to which both revenues and costs are assigned. As explained above, cost center is an activity to which only costs are assigned but a profit center is one where costs and revenues are assigned so that profit can be ascertained. Such revenues and expenditure are being used to evaluate segmental performance as well as managerial performance. A division of an organization may be called as profit center. The performance of profit center is evaluated in terms of the fact whether the center has achieved its budgeted profits. Thus, the profit center concept is used for evaluation of performance.

4-2-Classification of Costs:⁴ An important step in computation and analysis of cost is the classification of costs into different types. Classification helps in better control of the costs and also helps considerably in decision-making. Classification of costs can be made according to the following basis.

A. Classification according to elements: Costs can be classified according to the elements. There are three elements of costing, viz. material, labor and expenses. Total cost of production/ services can be divided into the three elements to find out the contribution of each element in the total costs.

B. Classification according to nature: -As per this classification, costs can be classified into Direct and Indirect. Direct costs are the costs, which are identifiable with the product unit or cost center while indirect costs are not identifiable with the product unit or cost center and hence they are to be allocated, apportioned and then absorb in the production units. All elements of costs like material, labor and expenses can be classified into direct and indirect. They are mentioned below.

i. Direct and Indirect Material: -Direct material is the material, which is identifiable with the product. For example, in a cup of tea, quantity of milk consumed can be identified, quantity of glass in a glass bottle can be identified and so these will be direct materials for these products.

⁴ 1-PLOWMAN Brian (2001), Activity based management: improving processes and profitability, Gower publishing company, Hampshire p96.

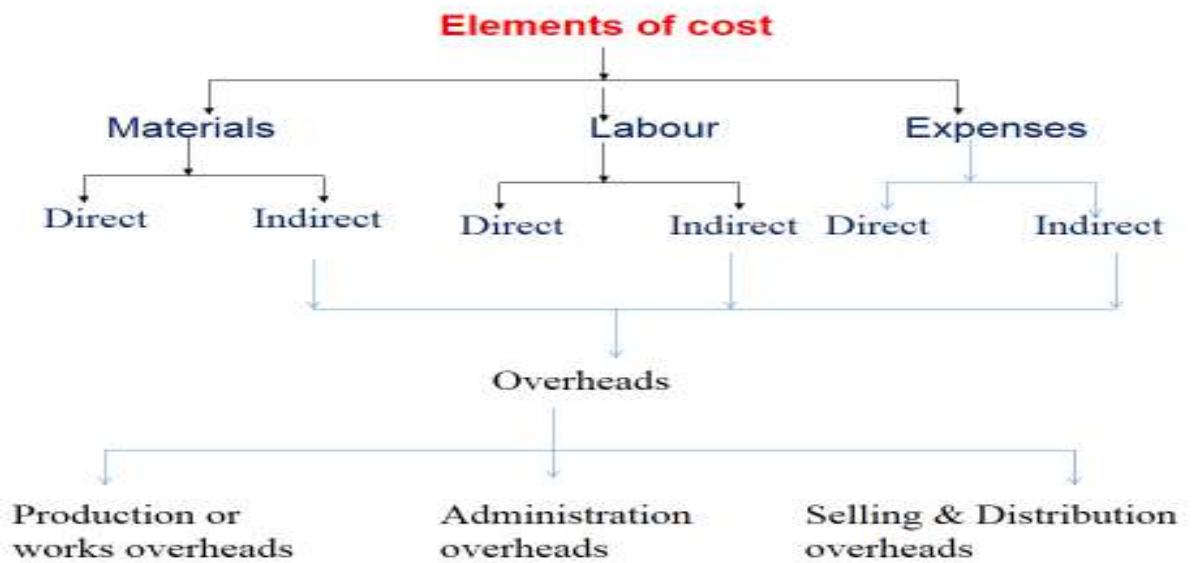
Indirect material cannot be identified with the product, for example, lubricants, fuel, oil, cotton wastes etc. cannot be identified with a given unit of product and hence these are the examples of indirect materials.

ii. Direct and Indirect Labor :- Direct labor can be identified with a given unit of product, for example, when wages are paid according to the piece rate, wages per unit can be identified. Similarly, wages paid to workers who are directly engaged in the production can also be identified and hence they are direct wages. On the other hand, wages paid to workers like sweepers, gardeners, maintenance workers etc. are indirect wages as they cannot be identified with the given unit of production.

iii. Direct and Indirect Expenses :- Direct expenses refers to expenses that are specifically incurred and charged for specific or particular job, process, service, cost center or cost unit. These expenses are also called as chargeable expenses. Examples of these expenses are cost of drawing, design and layout, royalties payable on use of patents, copyrights etc., consultation fees paid to architects, surveyors etc. Indirect expenses on the other hand cannot be traced to specific product, job, process, service or cost center or cost unit. Several examples of indirect expenses can be given like insurance, electricity, rent, salaries, advertising etc.

It should be noted that the total of direct expenses is known as 'Prime Cost' while the total of all indirect expenses is known as 'Overheads'.

Figure 1: Elements of cost



Source: Internal company information

C. Classification according to behavior⁵: - Costs can also be classified according to their behavior. This classification is explained below.

i. Fixed Costs: -Out of the total costs, some costs \$\$

remain fixed irrespective of changes in the production volume. These costs are called as fixed costs. The feature of these costs is that the total costs remain same while per unit fixed cost is always variable. Examples of these costs are salaries, insurance, rent, etc.

ii. Variable Costs: -These costs are variable in nature, i.e. they change according to the volume of production. Their variability is in the same proportion to the production. For example, if the production units are 2,000 and the variable cost is Rs. 5 per unit, the total variable cost will be Rs. 10,000, if the production units are increased to 5,000 units, the total variable costs will be Rs. 25,000, i.e. the increase is exactly in the same proportion of the production. Another feature of the variable cost is that per unit variable cost remains same while the total variable costs will vary. In the example given above, the per unit variable cost remains Rs. 2 per unit while total variable costs change. Examples of variable costs are direct materials, direct labor etc.

⁵ 1-PLOWMAN Brian (2001), Activity based management: improving processes and profitability, Gower publishing company, Hampshire p100.

iii. Semi-variable Costs: -Certain costs are partly fixed and partly variable. In other words, they contain the features of both types of costs. These costs are neither totally fixed nor totally variable. Maintenance costs, supervisory costs etc. are examples of semi-variable costs. These costs are also called as ‘stepped costs’.

D. Classification according to functions: Costs can also be classified according to the functions/ activities. This classification can be done as mentioned below.

i. Production Costs: - All costs incurred for production of goods are known as production costs.

ii. Administrative Costs: -Costs incurred for administration are known as administrative costs. Examples of these costs are office salaries, printing and stationery, office telephone, office rent, office insurance etc.

iii. Selling and Distribution Costs :-All costs incurred for procuring an order are called as selling costs while all costs incurred for execution of order are distribution costs. Market research expenses, advertising, sales staff salary, sales promotion expenses are some of the examples of selling costs. Transportation expenses incurred on sales, warehouse rent etc are examples of distribution costs.

iv. Research and Development Costs: - In the modern days, research and development has become one of the important functions of a business organization. Expenditure incurred for this function can be classified as Research and Development Costs.

F. Classification of costs for Management decision making:- One of the important function of cost accounting is to present information to the Management for the purpose of decision making. For decision-making, certain types of costs are relevant. Classification of costs based on the criteria of decision-making can be done in the following manner

I. Marginal Cost :-Marginal cost is the change in the aggregate costs due to change in the volume of output by one unit. For example, suppose a manufacturing company produces 10,000 units and the aggregate costs are Rs. 25,000, if 10,001 units are produced the aggregate costs may be Rs. 25,020 which means that the marginal cost is Rs. 20. Marginal cost is also termed as variable cost and hence per unit marginal cost is always same, i.e. per unit marginal cost is always fixed. Marginal cost can be effectively used for decision making in various areas.

II. Differential Costs:-Differential costs are also known as incremental cost. This cost is the difference in total cost that will arise from the selection of one alternative to the other. In other

words, it is an added cost of a change in the level of activity. This type of analysis is useful for taking various decisions like change in the level of activity, adding or dropping a product, change in product mix, make or buy decisions, accepting an export offer and so on.

III. Opportunity Costs: -It is the value of benefit sacrificed in favor of an alternative course of action. The maximum amount could be obtained at any given point of time if a resource was sold or put to the most valuable alternative use that would be practicable. Opportunity cost of goods or services is measured in terms of revenue, which could have been earned by employing that goods or services in some other alternative uses.

IV. Relevant Cost: -The relevant cost is a cost, which is relevant in various decisions of management. Decision-making involves consideration of several alternative courses of action. In this process, whatever costs are relevant are to be taken into consideration. In other words, costs which are going to be affected matter the most and these costs are called as relevant costs. Relevant cost is a future cost which is different for different alternatives. It can also be defined as any cost, which is affected by the decision on hand. Thus in decision making relevant costs play a vital role.

V. Replacement Cost: -This cost is the cost at which existing items of material or fixed assets can be replaced. Thus, this is the cost of replacing existing assets at present or at a future date.

VI. Abnormal Costs: -It is an unusual or a typical cost whose occurrence is usually not regular and is unexpected. This cost arises due to some abnormal situation of production. Abnormal cost arises due to idle time, may be due to some unexpected heavy breakdown of machinery. They are not taken into consideration while computing cost of production or for decision-making.

VII. Controllable Costs: -In cost accounting, cost control and cost reduction are extremely important. In fact, in the competitive environment, cost control and reduction are the key words. Hence, it is essential to identify the controllable and uncontrollable costs. Controllable costs are those which can be controlled or influenced by a conscious management action. For example, costs like telephone, printing stationery etc. can be controlled while costs like salaries etc. cannot be controlled at least in the short run. Generally, direct costs are controllable while uncontrollable costs are beyond the control of an individual in a given period of time.

VIII. Shutdown Cost: -These costs are the costs which are incurred if the operations are shut down and they will disappear if the operations are continued. Examples of these costs are costs

of sheltering the plant and machinery and construction of sheds for storing exposed property. Computation of shutdown costs is extremely important for taking a decision of continuing or shutting down operations.

IX. Capacity Cost -These costs are normally fixed costs. The cost incurred by a company for providing production, administration and selling and distribution capabilities in order to perform various functions. Capacity costs include the costs of plant, machinery and building for production, warehouses and vehicles for distribution and key personnel for administration. These costs are in the nature of long-term costs and are incurred as a result of planning decisions.

5-1-Difference between Cost Accounting and Financial Accounting:⁶

The distinguishing features of financial accounting and cost accounting are given below.

Financial Accounting	Cost Accounting
1. It aims at finding out results of accounting year in the form of profit and Loss Account and Balance Sheet. 2. It is more attached with reporting the results and position of business to persons and authorities other than management like government, creditors, investors, Owners etc.	1. It aims at computing cost of production/service in a scientific manner and then cost control and cost reduction. 2. It is an internal reporting system for an organization's own management for decision-making.
3. Financial Accounting data is historical in nature. 4. In financial accounting, the major emphasis is in cost classification based on type of transactions, e.g. salaries, repairs, insurance, stores etc.	3. It not only deals with historical data but is also futuristic in approach. 4. In cost accounting, classification is basically on the basis of functions, activities, products, process and on internal planning and control and information needs of the organization
5. In financial accounting, only those transactions are recorded which can be expressed in monetary terms. 6. It aims at presenting 'true and fair' view of the profit and loss position as well as financial position. 7. Financial Accounts are subject to statutory audit to verify whether they disclose a true and fair view of the profit and loss as well as Financial position.	5. Cost accounting uses both monetary as well as quantitative information. 6. It aims at computing 'true and fair' view of the cost of production/services offered by the firm. 7. Cost accounts are subject to cost audit which verifies whether the cost accounts disclose true and fair view of the cost of production of a company.

Table 1: The differences between cost and financial accounting

⁶FROST William (2005), ABCs of Activity Based Management Crushing competition through performance improvement, I Universe, Lincoln, 184 pages.

5-2 Practical Difficulties in Installation of Costing system:-

The practical difficulties expected at the time of installation of costing system are given below.

- I. Top Management of an organization may not give necessary support and recognition to the costing system installed in an organization. Due to lack of support, this system may not give desired results.
- II. There may be resistance from existing accounting staff due to fear of losing job recognition and importance after the implementation of the system.
- III. Employees of other departments may not co-operate for installation of costing system due to fear of increase in workload or revealing of inefficiency

Previous studies

Study 1: Cost and Management Accounting: An Information System for Management to help the Economic Company in Making Decision

In the framework of an unpublished doctoral dissertation at the University of Youssef Ben Khdeh, Algeria, 2005. How can a cost and accounting system be an effective tool for managers for decision-making? And how can Algerian economic institutions adapt with better management in light of the changes taking place in the national economy using the tools of management?

The aim of this study is to highlight the importance of the institution's availability of management tools and their effectiveness in the medium and long term

Improve the quality of the product and ensure the survival of the institution, so that the historical approach to the narrative of analytical accounting assets has been adopted since its inception

I came up with the latest methods discovered in this field, and then the analytical descriptive approach to the concept of analytical accounting as a system and tool

Help managers to make a decision, while trying to study the reality of analytical accounting in the Algerian economic institution.

A study 2 "cost Accounting as a Tool for Production Planning and Control" was conducted by Tuwayb Ahmad in the framework of the Master's thesis in

Economic Sciences Planning and Development Branch University of Algiers 2004: The problem of the study revolves around the status and role of analytical accounting

Among other tools used to plan and control production on the basis that they constitute an integrated information system.

-The objective of this study is to highlight the importance of analytical accounting in an important aspect of enterprise management, namely planning and control

In order to deal with this research, the researcher adopted the analytical method, which was used throughout the research chapters as required

The stage of treatment in order to deepen the understanding and identification of the components of the subject and the analysis of different relations by identifying their effects, especially

Related to the practical operational aspects related to planning and control or the development of the analytical accounting system and methods, as well as the various

The researcher also found through his study to:

The cost accounting system is the basic basis for planning and control of production with the information and technologies it provides;

II. Considering that cost accounting is the source of multi-portal information through multiple methods, each method can provide information in a manner

In order to analyze and uncover the various aspects that affect the course of costs and trends of the enterprise's productive activity,

However, there are ways in which other methods can be replaced because of the degree of precision they provide and therefore cannot be relied upon for the same purpose

For example, the variable cost method based on activities is more accurate than the homogeneous section method.

III. Cost Accounting is able to answer the emerging concerns regarding the accuracy of information, and economic costs.

Chapter II

Management Accounting And Control

Introduction:

The scope of Management Accounting is broader than the scope of cost accounting. In cost accounting, as we have seen, the primary emphasis is on cost and it deals with collection, analysis, relevance, interpretation and presentation for various problems of management. Management Accounting is an accounting system, which will help the Management to improve its efficiency. The main thrust of Management Accounting is towards determining policy and formulating plans to achieve desired objectives of management. It helps the Management in planning, controlling and analyzing the performance of the organization in order to follow the path of continuous improvement. Management Accounting utilizes the principle and practices of financial accounting and cost accounting in addition to other modern management techniques for effective operation of a company. In fact, there is an overlapping in various areas of cost accounting and management accounting. However, the distinguishing features of Management Accounting are given below.

2.1. Features of Management Accounting

The features of Management Accounting are given below.

1. The Management Accounting data are derived from both, the financial accounting and cost accounting.
2. The main thrust in management accounting is towards determining policy and formulating plans to achieve desired objectives of management.
3. Management Accounting makes corporate planning and strategy effective and meaningful.
4. It is concerned with short and long range planning and uses highly sophisticated techniques like sensitivity analysis, probability techniques, decision tree, ratio analysis etc. for planning, control and evaluation.
5. It is futuristic in approach and predictive in nature.
6. Management accounting system cannot be installed without proper cost accounting system.
7. Management Accounting systems generate various reports, which are extremely useful from the Management point of view.

2.2. Management Accounting Information and their use

I. Measurement: For measurement of full costs, the management accounting system focuses on the measurement of full costs. Full costs are the total costs required for producing goods or offering services. These costs are divided into A Direct costs and B Indirect costs. Direct costs are identifiable or traceable to the products or services offered while indirect costs are not traceable to the products or services. Full cost accounting measures not only the total costs [direct plus indirect costs] required for producing products or services but also the full costs required to run other activity like conducting a research project or running a welfare scheme and so on. Thus full cost accounting is not restricted to solely to measure the cost of manufacturing.

II. Control: An important aspect of the management accounting information is to provide information, which can be used for 'Control'. The management accounting system is structured in such a manner that information is generated for each 'Responsibility Center'. A responsibility center is an organization unit headed by a manager who is responsible for its operations and performance. Management accounting helps to prepare budget for each responsibility center

and also facilitates comparison between the budgeted and actual results. A report is prepared for each responsibility center, which shows the budgeted and actual performance and also the difference between the two. This enables the performance analysis of each responsibility center so that proper corrective action can be taken in this respect.

III. Decision Making: Management accounting generates useful information for decision-making. Management has to take several decisions in the course of business. Some of the major decisions are Make or Buy Accepting or rejecting of an Export Order, Working of second shift, Fixation of selling price, Capital expenditure decisions, increasing production capacity, Optimizing of Product Mix and so on. For all these decisions, providing of information is necessary and the management accounting generates this information, which enables the management to take such decisions.

2.3. Role of Management Accountancy

The role of management accounting and financial accounting is quite different from each other as they have different goals altogether. Management accounting measures analyzes and reports financial and non-financial information that helps managers to take decisions to fulfill the goals of an organization. Managers use management accounting information to choose, communicate and implement strategy. They also use management accounting information to coordinate product design, production and marketing decisions. Management accounting focuses on internal reporting. The following points highlight the role played by Management Accounting in the business organization.

I. Implementing Strategy: Managers implement strategies by translating them into actions. Creating value for customers is an important part of planning and implementation of strategies. Strategic planning and implementation will include decisions regarding the design of products, services or processes, research and development, production, marketing, distribution and customer services. Each of this area is important for satisfying customers and keeping them satisfied. Management accounting will help to track the costs of each of the activity mentioned above. The ultimate target is to reduce costs in each category and to improve efficiency. Cost information also helps managers make cost benefit analysis. For example, managers can find out that is it cheaper to buy products from outside vendors or to do manufacturing in-house. Is it worthwhile to invest more resources in design and manufacturing if it reduces costs in marketing and customer service?

II. Supply Chain Analysis: Companies can also implement strategy, cut costs and create value by enhancing their supply chain. The term ‘Supply Chain’ describes the flow of goods, services and information from the initial sources of materials and services to the delivery of products to customers regardless of whether those activities occur in the same organization or in other organization. Customers expect improved performance from companies through the supply chain. They expect that the companies should perform all these activities in an efficient manner so as to reduce costs and also maintain quality of the products and the products be available easily for them. This is no doubt a daunting task and the management accounting plays a vital role in ensuring value for money for the customers. Tools like standard costing and target costing can be used effectively for cost control and cost reduction and thus ensure reasonable prices for customers. A system of budgets and budgetary control will ensure continuous planning and monitoring various functions and thus provide for introspection. Continuous improvement in these activities will help in creating value for customers.

III. Decision Making: One of the important functions of management is decision making. Management Accounting helps in this crucial area by providing relevant information to the management. Techniques like marginal costing helps to generate information, which will be useful for taking decisions. Decisions include make, buy decisions, adding, or dropping a product line, working of additional shift, shut down or continue operations, capital expenditure decisions and so on. Decisions based on information are expected to be more rational and objective rather than subjective.

IV. Performance Measurement: Management accounting helps immensely for the measurement of performance of the organization. The main aspect of performance measurement is comparison between the targets and actual. There are several tools and techniques like budgets and budgetary control, standard costing and marginal costing, which are used in measuring the actual performance against the target performance. This will facilitate introspection and corrective action can be taken for further improving the performance.

I. Financial, Cost and Management Accounts:

Methods	Character	Suitable for
1. Process Costing	Continuous Production	Sugar, Cement, Chemical, Fertilizer
2. Job / Contract Costing	One Job differ from other Job.	Construction of Road, Bridge, Hospital
3. Operation Costing	Service Provider	Transportation, Hospital, Hotel, Telecom, Bank
Variation of above methods		Information technology
Batch Costing	A lot produce at once	Pharma, Jewelry
Joint Costing	To some extent Joint then separate	Crude Oil
Multiple Costing	Various method applied	Car, Radio, TV and Electronics Items
	Techniques can be used in any industries at anytime. These techniques more than one can be applied at a time	
1. Marginal ,Costing	For Decision Making	Decision for Price & Volume
2. Standard Costing	For Control & Reduction	Variance Analysis
3. Budgetary Control	For Control & Reduction	Control of element wise cost
4. Uniform Costing	For Control & Reduction Cost	Compare with other units in the same industry
5. Interfirm Comparison	For Control & Reduction	Compare with other firm
6. Target Costing	For Control & Reduction	Phase wise controlling
7. Activity Base Budget	For Control & Reduction	Control through value added
8. Activity Bas Management	For Control&ReductionCost	Control through value added use of resources

Table2: The Technical Using Of Financial, Cost And Management Accounting

Part II

Chapter I

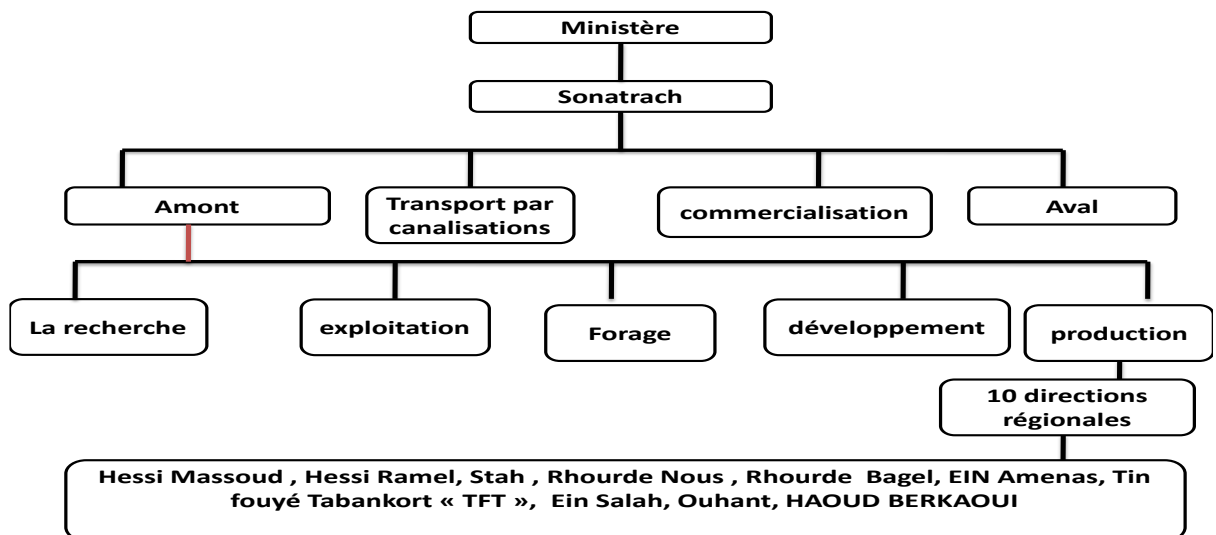
Presentation of the Production Division "HBK"

3.1. Definition of company SONATRACH :

SONATRACH⁷: is the national Algerian company of research, exploitation, transport by pipelines, transformation and marketing of hydrocarbons and their derivatives. Its mission is to optimize the national hydrocarbon resources and create wealth for the economic and social development of the country. As an integrated oil company, Sonatrach is a major player in oil and gas. This makes it the first hydrocarbon company in Africa and the Mediterranean. It operates in four main areas: Exploration & Production, Pipeline Transport, Liquefaction, Refining, Petrochemical and Commercialization.

It is present in several projects with different partners in Africa, Latin America and Europe. Sonatrach has adapted to the new global economic environment by diversifying its activities. It has, therefore, invested other economic niches such as electricity generation, water, air and sea transport. Today, Sonatrach is not only an international oil and gas group but also a solidarity, responsibility and citizenship company. It is committed to the economic, social and cultural development of the people; It has set itself key priorities in the field of HSE and is firmly committed to protecting the environment and preserving ecosystems.

Figure 2: Organization of the company SONATRACH



Source: SIAGH Mohamed Ridha, Cost Accounting Manager

⁷http://www.memoireonline.com/08/09/2573/m_Rapport-de-stage-societe-petroliere-SONATRACH1.html

3.1.2. the missions of Sonatrach⁸

Sonatrach's core businesses cover the whole hydrocarbon chain, starting with research and exploration, until hydrocarbons are processed and marketed to final consumers.

These activities can be grouped into four global activities;

- the oil upstream
- Downstream oil;
- Transport by pipeline;
- the marketing of hydrocarbons and petroleum products.

We will present them briefly:

a) Upstream oil

- Exploration;
- drilling;
- Well services;
- Development of deposits and exploitation of deposits

b) Downstream

- Liquefaction of natural gas ~ separation of LPG;
- refining;
- petrochemicals

(C) Pipeline transport (TRC)

- development and realization of pipelines for transporting hydrocarbons produced from crude oil, condensate, natural gas and LPG deposits;
- Operation of the pipeline transport system
- the maintenance of the pipeline transport system.

(D) Marketing

- The marketing of hydrocarbons and petroleum products both on the international market and on the national market

⁸http://www.memoireonline.com/08/09/2573/m_Rapport-de-stage-societe-petroliere-SONATRACH1.html

- trading and shipping of hydrocarbons (Sonatrach has a large fleet of LNG carriers, LPGs and oil tankers) and business development abroad

3.1. 3.The organization of the company SONATRACH⁹:

In 1981, SONATRACH decided to restructured the company and segmented the 16 independent companies of the parent company and among these on Site Company:

- ✓ "ENTP" National Company of Works At Well
- ✓ "ENPC" National Enterprise for Rubber And Plastics
- ✓ «ENAFOR» National Company for the Drilling
- ✓ «ASMIDAL» National Company of Chemical Fertilizers
- ✓ «NPHS» National Company at Well Services
- ✓ «ENGCB» National Company of Civil and Building Engineering
- ✓ «ENGED» National Company of Geophysics
- ✓ "ENAC" National Transport Company
- ✓ "ENGTP" National Enterprise of the Great Praetorian Works
- ✓ «ENEP» National Enterprise for Petroleum Engineering
- ✓ "SONALGAZ" National Electricity and Gas Company
- ✓ "IAP" International Center for Research and Hydrocarbons

3.1.4. The objectives of SONATRACH:

- Access to international markets
- Access to new sources of financing
- Access to new know-how and new knowledge, both technical and technological.
- A large global market share for each product at the consumable country level

⁹Kat Hanane, aiche Khadfdja, financial diagnosis in economic enterprise case study: regional director Houad Berkaoui, internship report to obtain academic bachelor's degree in management science, 2015/2014 University Ouargla, p05

3.2.1 Presentation of the region HOUAD BERKAOUI :

The production division consists of 9 regions (HRM, Hassi Remel, HMD, Hassi Messaoud, HBK, Haoud Berkaoui, GT, Gassi Touil, RNS, Roudh Nouss, TFT, Tin Fouye Tanbankort, INA, INHENAS, STH, Stah, OHT Ohanat) among these regions HOUAD BERKAOUI

3.2.2 Description of region:**1. Geographical Situation¹⁰**

The Oued Mya region is located in the northern part of the Algerian Sahara; It locates itself more precisely in what BUISSON (1970) called the central province. This region has the configuration of a depression, elongated orientation NE-SW acquired During the Paleozoic. It is limited In the North by the high zone of DJEMAA-TOUGGOURT constituted of lands of age how much and Ordovician resting on an ante Cambrian rhyolite basement. In the north-west, the mole of TALEMZANE-HASSI RMEL. -South-east, the pier of HASSI-MESSAOUD, which extends to the North by the high zone of TOUGGOURT.

In the East, we note the presence of a positive axis constituted by the ridge of EL-AGREB EL-GASSI, which extends as far as MESSAOUD in the North.

The region of HAOUD-BERKAOUI is part of the basin of the wadi MYA; it is located north of the depression.

This structure is located in the most subsiding northeast / south-west part, it is separated from the ridge of ERG DJOUAD by a furrow whose amplitude varies from 200 to 400 Km, its width varies from 25 to 30 Km in the South-West and 8 to 10 Km in the North East. HAOUD BERKAOUI is located about 700 Km in the South-East of ALGER, to 25 Km to the Southwest of OUARGLA and to 100 Km to the West of HASSI –MESSAOUD

¹⁰Internal company information

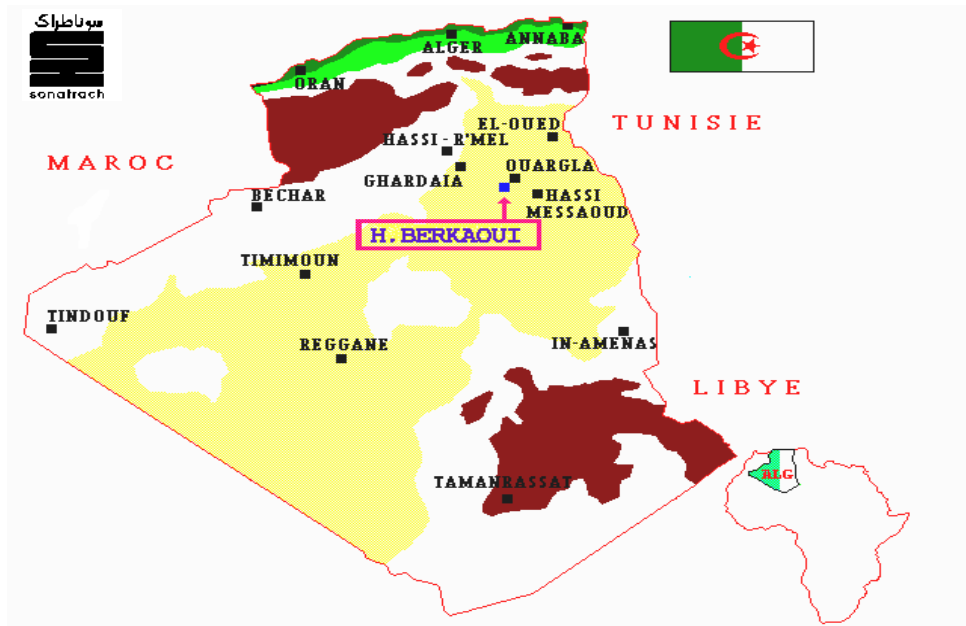


Figure 3: Location map of the region

2. Fields of the region:

The region of HAOUZ BERKAOUI is one of the major Algerian and Triassic oil sectors and consists mainly of three main deposits (Berkaoui-Gualala-Bankable) as well as small structures on the periphery whose names are as follows:

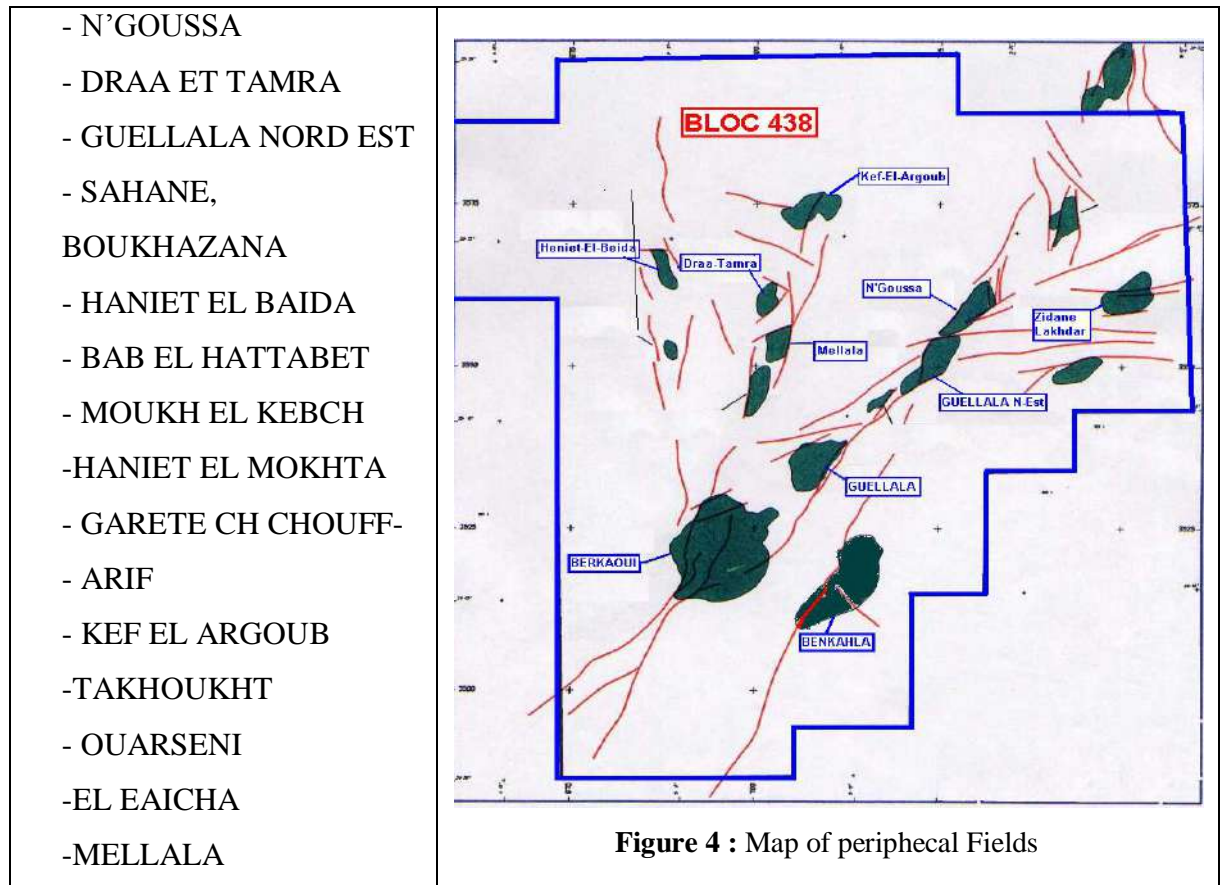


Figure 4 : Map of peripheral Fields

3.2.3 The organizational chart of the regional Haoud Berkaoui¹¹

The Regional Direction HBK, headed by the Regional Director and accompanied by Regional Director Assistants, is responsible for setting the objectives of the HBK Directorate for the realization and monitoring of hydrocarbon production programs and the internal working procedure, And the follow-up of the task conflicts to each division (lead and supervise the production operations) All the structures of the region are articulated in terms of function under the direction and the authority of the regional director. In order to carry out its activities, SONATRACH's management (HBK) has been subdivided into two functions (administrative and technical), and each division function, which consists of its turns, the number of which varies according to the importance of tasks from (02 to 05).

1-FONCTIONS ADMINISTRATIVES**PERSONALDIVISION**

General Administration Service

Service planning

Management Service

Payroll Service

Social service

Heath Service

The FINANCE.DIVISION

General Accounting Services

Cost Accounting

Treasury Department

THE INDENDANCE DIVISION :

Hosting Service

Catering service

2- FONCTIONS TECHNIQUES**DIVISION ENGINEERING & PRODUCTION**

Service Test and Measurement

Service Intervention

Geology Service

Technical service well.

Service Corrosion Treatment.

REALIZATION DIVISION:

Service New works.

Civil Engineering Service.

Electromechanical Service.

Service Maintenance work.

SECURITY DIVISION:

Prevention Service.

Service Intervention

¹¹ZITOUNI Aicha Fatma, internship report, last year, May 2015

MAINTENANCE DIVISION :

Industrial Maintenance Service.

Service Instrumentation.

Service Electricity.

Service Method.

OPERATING DIVISION:

HBK Operations

GLA Operations

SUPPLY AND TRANSPORT DIVISION:

Inventory Management

Hardware Service

Transport Service

Service Vehicle Service

Purchasing department.

Chapter II

Presentation of financial division

3.3.1 Presentation of finances division:

Like all companies operating in the oil and gas sector. The Sonatarch management, precisely the "HBK" unit, which is subject to strict legal obligations imposed by the legislator, is primarily responsible for presenting a true and fair view of their assets, financial situation and results, a part on the other part, this constraint, "HBK" has opted for a way of managing its accounting in a way has facilitated the recording work, and the retention of the bass data of the financial statements, Timely information

Definition: Management and follow-up of all entry and exit movements of the company's expenses. It is responsible for the accounting entry of all operations related to general financial flows through.

The various activities of the division are carried out by the following services:

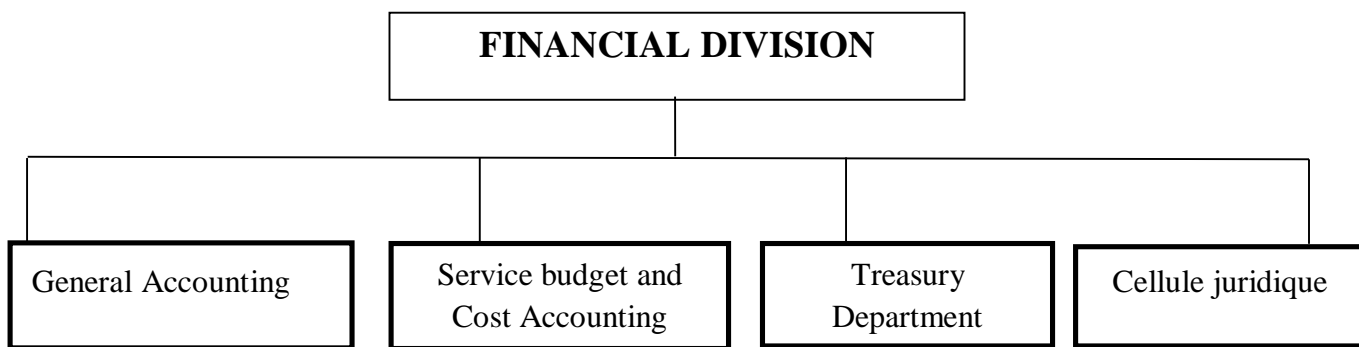
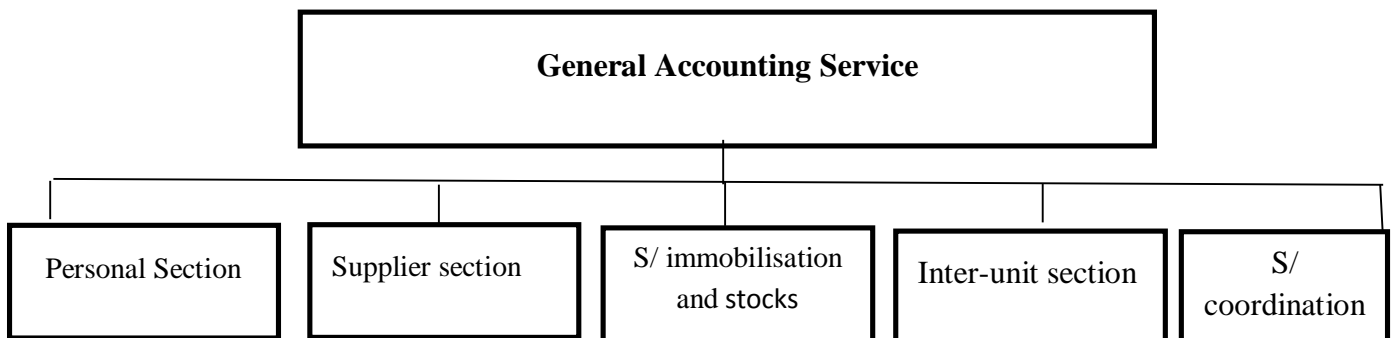


Diagram 1: the main services in finance division

1- GENERAL ACCOUNTING SERVICE:

Following the general accounting service organization chart, which is made up of five grant sections each provides for the accounting and monitoring of transactions¹²



¹²Interne Source (made by the student) from the appendix of the company.

Diagram 2: the main section in general accounting service

1.1 Personal Accounting Section: It is responsible for all staff related transactions:

- Payroll control and accounting.
- Monitoring and accounting for loans.
- Preparation of the tax declaration (TVA,IRG TAP ...). And "social" parafiscals. (CNAS 25% + 1%) of the employer and 9% of the employee)
- Monitoring and accounting for family allowances.
- Monthly accounting entry.
- The reconciliation of accounts (inter-regions and directorates).

✓ **Supplier Section :**

⇒ It handles the management of suppliers, from receipt of invoices to transmission of the complete file for settlement, it is in charge of:

- Recording and accounting of invoices,
- The preparation of vouchers.
- Entering accounting stories; Pointing of journal entries; Separation of exercise and tasks
- Monitoring of suppliers' advances and warranty deductions and monitoring their contracts.
- Tax return on corporate income tax (IBS)
- Analysis of self-checking accounts.
- Elaboration of the balance sheet at the end of the year in March (14 months)
- Follow-up of the delay penalty or advances from suppliers.

✓ **Local Suppliers: responsible for:**

- Reception accounting of invoices.
- Registration of invoices.
- Establishment of vouchers to pay.
- Entering the accounting vouchers (payment, settlement).
- Account analysis.

The invoice registration number (GAFO software) is composed of: Area code "cc"

Month of registration "1.2 9. O.N.D "=" Jan. Dec. "

Number of suppliers section « 02 ».

Order number «001.002.... XXX »

- A voucher to pay and send invoice to the division (DAT. PER.MNT. INT) for scheduling

- C12 for charging.

- C15 for payment. 100% DA

⇒ **The main local suppliers are:**

- AIR Algeria
- NAFTAL CLP
- Subsidiary of SONATRACH "ENTP; NPHS; ENAFOR »

- ✓ **Foreign supplier:**

⇒ The Procedure used for the circulation of documents is practically identical to that used for the local supplier.

⇒ for foreign suppliers it schedules three copies of each invoice (part dinars and currency part)

⇒ Payment is made at headquarters level: 100% DA (75% euro against 25% DA)

The main foreign suppliers are:

- C S D S company of services DOWELL-SCLUMBERGER
- WATHERFORD
- HALLIBURTON

Chapter II

Presentation of financial division

2- MANAGEMENT ACCOUNTING SERVICE: it consists of three sections :

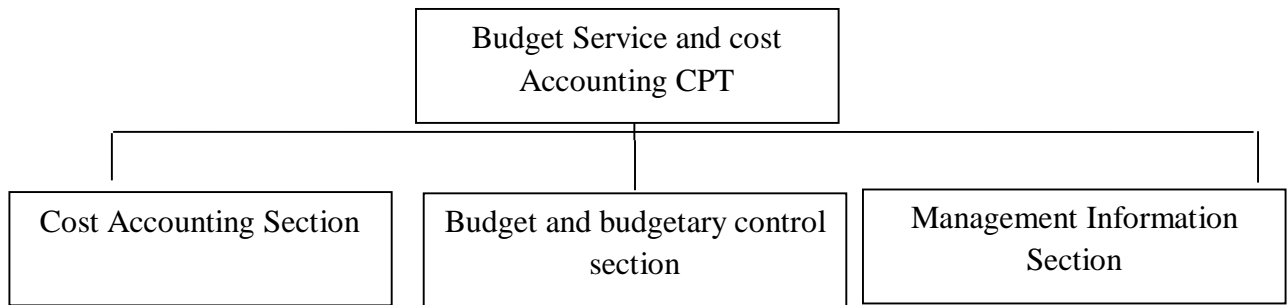


Diagram3: The main section of budget and cost accounting service

2.1. cost Accounting section:

Cost Accounting¹ is a way of processing accounting and economic information. It is part of the management accounting and constitutes by the same a tool of the general accounting, it makes it possible to show to the managers the performances in the process of exploitation and the realization of the investments. It provides information that enables the division to monitor ongoing operations, plan and make rational decisions

- It can be a piece of evidence in case of dispute
- To evaluate the profitability of selling prices and services by comparing them to the corresponding costs.
- To clarify the budget choices of the areas of investment and exploitation.
- To develop internal control of the activity, the essential element of which remains the cost, particularly in its standard form.

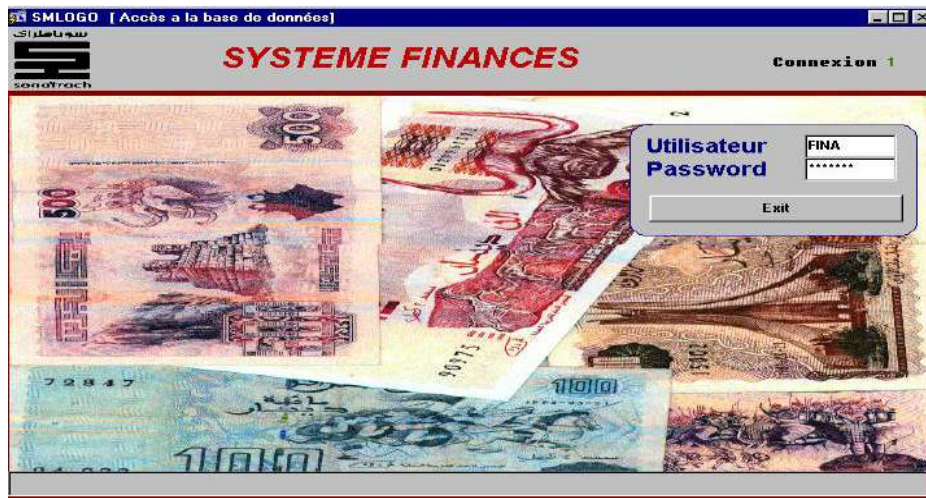
2.1.1 His missions are:

- Recording of all expenses and products by nature and by destination on cost centers.
- Processing of the various documents received from all divisions and divisions DP / HR, which consists of the verification of the timeliness and accuracy of the analytical account.
- Have close relations with the divisions and directorates for the collection of information concerning exploitation and investment.
- Treatment of discharges from analytical operations.
- Analysis of the general ledger and cost price.

This function allows access to the Analytical Accounting application. This is the first function that runs when launching the application

¹SONATRACH Cost Accounting User's Guide

Figure 5: HBK Finance System Application



Source: The responsible of cost Accounting

User: Name of user in General Accounting application

Password : Mot de passe de l'utilisateur

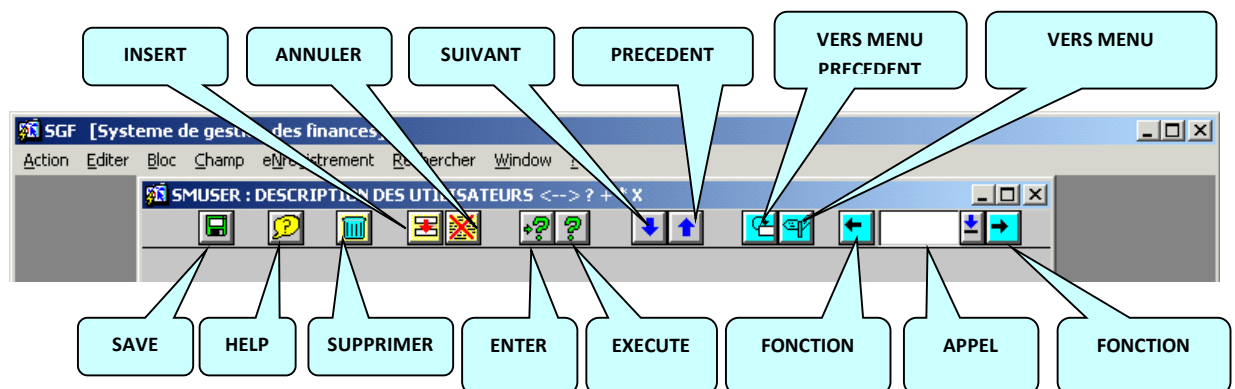
Remarque: The users of the application are two categories:

1. Simple user: user with fixed responsibility interpreted by assigning rights to functions to this user.
2. User Administrator: Primary user who has full rights to all functions of the application.

You will see at the top of all the shapes that you call by the functions, an icon bar that allows you to do consultations, data changes, insertions or deletions.

To familiarize yourself with this bar, consult the procedures for its use

Figure 6: The functions of the SGF system.



Source: The responsible of cost Accounting, SIAGH

2.2.1 Types of charges and costs:

1. Direct charge: Are those that can be directly assigned to a cost object. Consumption of consumable goods, materials and supplies.

Direct labor costs.

Direct selling costs

2. Indirect charge: There are charges that cannot be immediately assigned to a cost object. They require an intermediate calculation to be charged to a specific cost object

3-Production cost: A set of costs incurred to produce a good. This includes

The cost of purchasing the raw materials and consumables used by the processing or manufacturing plants.

Direct (direct labor) or indirect (services, other costs) costs of processing or manufacturing.

It concerns all enterprises (commercial or producer). This includes

- Warehousing costs for finished products.
- Shipping or shipping charges.
- Advertising costs.
- Commissions of the Sellers

4- Cost Price: The full cost of a product at the final stage, including cost of delivery. (PCG)
.This is the sum of the costs ranked in hierarchical order

This cost can be:

- A functional cost (by economic function: purchase, production, sale).
- A cost per means of exploitation (factory, department, store ...).
- A cost per operating activity (stages of product development).
- One cost per center of responsibility (general management, functional divisions, and workshop managers)

2.1.3 Its structure:

The DRP's cost accounting consists of two distinct parts, each with a different function.

We find

- Cost accounting at standard cost: designed to facilitate the management of accounts for service managers
- Cost accounting at real cost: intended for tax purposes and for the financing of partners

Cost centers can be grouped into three types of accounts**✓ The grouping accounts:**

They are intended to record charges for which the amount is to be determined for management reasons, these accounts are automatically dumped on the sections by means of a written code, and at the end of the period (month for standard, year for real) They have zero balances.

The spill is carried out using a previously established splitting key; this spill constitutes a first load distribution, which is a first processing of the information.

✓ Section accounts:

A section is an accounting cell whose charges relate to a given activity center.

✓ The cost price accounts:

They constitute the final phase of determining costs, which is the objective sought by the company. This cost price is not the object of any spill; it is used for the determination of analytical result.

- The cost accounts may be charged either directly to general accounting or indirectly. The cost accounts are distinguished by their first figure:
- For the oil production cost price.
- For the cost price of gas.

2.1.4 OPERATIONS CARRIED OUT IN THIS SERVICE:

For the determination of cost and cost, there are different types of documents circulated between the different divisions and the analytical department (which is attached to the finance division), these external borders and / or documents are invoices (Internal or external) and must have the purpose of determining the state of (S):

- Inventories
- Payroll
- Production

The seizure slips that contribute to the realization of this purpose within the DPR Haoud Berkaoui are entitled:

- ❖ **Internal Movement and Operation Encrypted ¹:** (Code 61) Road allowance sheet (annex01)

Types of work unit: Algerian dinar; It is used to account for the travel allowances allocated to VC agents to compensate for the transport costs incurred by them, which covers the part of the transport not insured by the company but which remains the responsibility of the company

N?liq	Bord	Dat.c	N?cess	Nat	Compte	Analy	Contre	Partie	Montant	Mon
20	001	014		736	217370		217521		3600.00	8
21	001	014		736	217485		217521		22500.00	8
22	001	014		736	3176036		217521		60300.00	8
23	001	014		736	3176081		217521		13500.00	8
24	001	014		736	317605001		217521		17100.00	8
25	001	014		736	3186036		217521		128700.00	8
26	001	014		736	31860366		217521		25200.00	8
27	001	014		736	318610		217521		198000.00	8
28	001	014		736	3CF601		217521		16200.00	8
29	001	014		736	3CF6081		217521		9000.00	8
30	001	014		736	327021		217521		9000.00	8
32	001	014		736	518334		217521		245700.00	8

Table3: The charges of write code 61.

- ❖ **Transfer and resumption of entries on Worksheet, whose unit of work is expressed in hours (code 62) (appendix02)**

Charge users, the services requested by work order or request to the auxiliary sections. This billing is made to provide complete and accurate information to services receiving benefits..

N?liq	Date	N?cess	Nat	Nb.UO	Compt	Analy	N?F Trv	Contr	Partie	N? O Trv	Tx.UO	A	Montant
1	074		749	31,00	217891120		C7P106		217871				
2	074		749	35,00	217891185		C7P107		217871				
3	074		749	18,00	217891191		C7P108		217871				
4	074		749	6,00	217891197		C7P109		217871				
5	074		749	136,00	217891551		C7P110		217871				
6	074		749	26,00	217891568		C7P111		217871				
7	074		749	7,00	217891588		C7P112		217871				
8	074		749	5,00	217892223		C7P113		217871				
9	074		749	7,00	217892224		C7P114		217871				
10	074		749	36,00	217893235		C7P115		217871				
11	074		749	8,00	217893236		C7P116		217871				
12	074		749	2,00	217893237		C7P117		217871				
13	074		749	40,00	217893238		C7P118		217871				
14	074		749	7,00	217893348		C7P119		217871				

Table 4: the charges of write code 62

- ❖ **Transmission and resumption of writing on the Car Park, inviolable in days, or kilo meters traveled (write code 71) (appendix 03)**

¹Mohammed Ridha SIAGH, Analytical Guide HBK Region

Report log sheet

Type of work unit: day and km

Daily charging to users of vehicles requested by transport request

Monthly Sheet On board type of work unit: Day and km

Charge monthly to users affected vehicles by decision

N°lig	bord	Date	N°ress	Nat	Catg	Nbuo	Compt_Analy	Nkm	IM	Contr_Partic	JA	JB	JR	A
1	001	054	774	204		30,0	217401	267		217891120	,0	,0	1,0	31
2	001	054	774	204		29,0	217402	1000		217891185	,0	,0	2,0	31
3	001	054	774	204		29,0	217521	983		217891491	,0	,0	2,0	31
4	001	054	774	204		30,0	217400	402		217891694	,0	,0	1,0	31
5	001	054	774	204		30,0	217370	1258		217891952	,0	,0	1,0	31
6	001	054	774	204		29,0	217840	150		217892066	,0	,0	2,0	31
7	001	054	774	204		23,0	210600	2029		217893239	,0	,0	0,0	31
8	001	054	774	204		30,0	217600	957		217893235	,0	,0	1,0	31
9	001	054	774	204		30,0	217772	429		217893237	,0	,0	1,0	31
10	001	054	774	204		19,0	217521	1071		217893316	,0	,0	12,0	31
11	001	054	774	204		29,0	217406	643		217893349	,0	,0	2,0	31
12	001	054	774	204		11,0	217773	1325		217893492	,0	,0	20,0	31
13	001	054	774	204		29,0	217840	1500		217893494	,0	,0	2,0	31
14	001	054	774	204		30,0	217200	1075		217893537	,0	,0	1,0	31

Table5: The charges of write code 71

- ❖ **Acceptance and resumption of entries on fuel**, the unit of measure is the liter (code 72) (annexe04)

Carburant file

Type of work unit: Litrer

Charge each vehicle with fuel consumption at the service station in the district

N°lig	bord	Date	N°ress	Nat	Cod Carb	Nbr_UO	Compt_Analy	Contre_Partic	A
1	1	014	773	104		295,00	7370	217872001	
2	1	014	773	104		197,00	7375	217872001	
3	1	014	773	104		812,00	7480	217872001	
4	1	014	773	104		2376,00	7404	217872001	
6	1	014	773	104		1894,00	7576	217872001	
6	1	014	773	104		448,00	7777	217872001	
7	1	014	773	104		867,00	7810	217872001	
8	1	014	773	104		-80,00	7871	217872001	
9	1	014	773	104		9167,00	7890201	217872001	
10	1	014	773	104		7982,00	7890210	217872001	
11	1	014	773	104		588,00	7890220	217872001	
12	1	014	773	104		4907,00	7890230	217872001	
13	1	014	773	104		1271,00	7980	217872001	
14	1	014	773	104		200,00	7825	217872001	

Table 6: the charges of write code 72

- ❖ **Acceptance and Recovery of Air Way Entry¹**, Billable with number of trip (code 81)

Air waybill

Types of work unit: trip

The screenshot shows a software window titled 'SGF [Système de gestion des finances]'. It displays a table of accounting entries. The table has columns for 'N°In', 'Inf.c', 'N°Casse', 'Inf', 'Code', 'tramp', 'Mn', 'ID', 'Compt', 'Analy', 'N°Bord', and 'A Mon'. The data rows show various entries with codes like 010, 704, 5T1BB, 02, 01, 05, 06, 07, 08, 09, 10, 11, 12, 13 and amounts such as 218983, 212621, 212688, 212983, 222983, 2CF883, 217078, 212800, 212771108, 218888, 217421, 212677.

Table 7 : Write Code Charges 81

- ❖ **Invoicing write-back and write-back U-shaped, O** billable in cubic meter, square meter, kilo watt, points (restoration), coefficient hours (code: 90)

Catring, hosting

Type of the work unit: point

The cost of food and accommodation for the staff of the subcontractor and guest is allocated to the inorganic staff (allocation of food and accommodation costs to the organic staff is done through the position sheet

Sttafing type of the work unit :Hour coefficient

Impute the various operations carried out by the technical services well, intervention and sink measurements to all the fields of the region.

Water Fortune Type of work unit: cube metre

To allocate to users per unit of work per month the amount of water consumed

(Unit Exploitation)Types of Work Unit :hour coefficient

Different activities of the operating agents by Professional category and by shifts or shifts (3 * 8) or (12 * 2) on the whole

¹Synthesis report of the seminar about the annex of the cost accounting

- **Production unites of the region.**

Hour coefficient is applied as followed:

Master's staff **8 points**

Executive staff **7 points**

Execution staff **6 points**

Supply of electricity Type of work unit: kw/h

Allocate to users monthly per unit of work the amount of electricity consumed

N7lg	Bord	Date	N7cess	Mat	HB 00	Compte_Analy	Contre_Partie	A
1	013	013		769		900,00	217000	
2	013	013		769		600,00	217070	120CC00
3	013	013		764		600,00	217200	120CC00
4	013	013		769		600,00	217210	120CC00
5	013	013		764		600,00	217260	120CC00
6	013	013		764		600,00	217480	120CC00
7	013	013		769		600,00	217520	120CC00
8	013	013		764		600,00	217521	120CC00
9	013	013		769		1000,00	217500	120CC00
10	013	013		764		600,00	217880	120CC00
11	013	013		764		600,00	217883	120CC00
12	013	013		769		600,00	217700	120CC00
13	013	013		764		600,00	21771400	120CC00
14	013	013		764		600,00	217772	120CC00

Table 8: the charges of write code 90

Analytical documents used to repair internal charge:¹

- The daily production report, issued by the Engineering and Production Division
- Worksheets, issued by the maintenance, logistics, technical and safety division, whose work unit is the working time
- Fuel card issued by the Supply and Transport Division
- Electrical distribution and supply cards issued by the maintenance division, it measures the quantities of electricity supplied to the various structures in the HBK region
- Distribution of water, issued by the staff status, by the H.R division

¹Mohammed Ridha SIAGH, Analytical Guide HBK Region

The Analytical service must:

- Receive the typed documents transmitted by the managers of each service,
- Verifies documents and information, transmitted and delivered electronically via the GEFAO software at headquarters.
- Receipt of documents after being typed, classifying documents relating to service providers.

And produce the following output State or Document:

- Analytical journal
- Large analytical book
- Analytical cost price
- balance of supplies

With monthly intervals at standard cost, and annual at actual cost.

To conclude; cost accounting has two missions

- 1- Determine the costs and the overall production cost of production and all operating costs of an activity center is recorded in an accounting account called the "analytical account"
- 2- Reconcile the analytical results with the budget estimates and determine the rate of achievement.

3-2 Budget and Budget Control Section¹:**3-2-1 The Exploitation Budget :**

The "Exploitation Budget" section is responsible for the budget preparation and monitoring of its implementation, also known as budgetary control of exploitation (CBE)

The budget is a program based on a projected realization, and valued at the standard cost, each person in charge of a structure must draw up his budget according to the human and material means at his disposal, starting from the two months.

¹Synthesis report of the seminar about the annex of the budget.

Among these missions we site:

- Interpretation budget estimates.
- Development of objectives to be achieved.
- Collection of expenses.
- Comparing Achievements and Forecasts and Identifying Gaps.
- Audit, entry, processing of the budget.
- Budget summary and commentary.

3-2-2 The various annexes used :¹

- **Annex I:** This document lists the details of direct purchases to third parties, as well as consumables that have been removed from the store. This is to centralize all purchases and consumption in the HBK region, and to have an overall assessment of the needs of this region
- **Annex II:** this document lists all the services received and carried out by third parties, but also by other production units (other production regions). The purpose of this document is to account for all external services invoiced to the region
- **Annex III:** this document covering all the mission expenses of the various active agents, whether they are in Algeria or abroad (including the number of missions, number of days, rate of compensation, transport price)
- **Annex VI:** this document which lists the internal services received. They are inter-service services in the HBK region, and each department head provides the services he needs for the budget period for the proper functioning of his service.
- **Annex VII:** this document which the internal services provided. They are inter-service HBK services, and each service manager foresees the services he will have to provide to other services for the budget period
- **Annex VIII:** this document lists all the services provided to third parties, but also to other regional directorates (other production regions). The purpose of this document is to record all external services invoiced to other Sonatrach branches and to third parties.

¹Synthesis report of the seminar on the annexes of the budget.



Figure 7: Transfer of documents to the GFAO application

I- Extract deviations:**1- Extract deviations in the section of wells interventions:**

Returning to the estimated budget, I noticed that the total number of working hours predicted at the beginning of 2015 was 65016 hours. By the end of 2015, the number of hours actually completed was 22426 hours.

- Calculate deviation in working hours:
 - ✓ Annual deviation in the number of working hours:
 $65016 \text{ H} - 22426 \text{ H} = 42590 \text{ H}$ not completed

2- Extract deviations in the General Reforms section:

Returning to the estimated budget, I noticed that the total number of working hours predicted at the middle of the last 2015 was 42400 hours. By the end of 2015, the number of hours actually completed was 46832 hours.

- Calculate the hexadecimal deviation in the number of working hours :
 $46832 \text{ H} - 42400 \text{ H} = 4432 \text{ H}$ not completed

II- Analysis of deviations and their interpretation:

1) Analysis extract deviations in the section of wells interventions :

The occurrence of a negative deviation in this section is due to the following possibilities:

- ✓ Lack of experience in predicting working hours in the field of wells interventions.
- ✓ Bad management in this section.
- ✓ Absence of control over the monitored workers.
- ✓ The estimation process is not based on objective criteria and criteria for not referring to previously completed reports.

III- Corrective actions to be taken:

- Budgets should be prepared according to objective and practical criteria and statistique criteria
- Good use of monthly reports sent by departments
- Granting training courses to the budget preparers
- Assigning observers from outside the organization to monitor the work and internal workers

General Conclusion

General conclusion

This internship, which is part of my pedagogical training, and which aims to give me a vision of the professional world by a first experience in company, allowed me to bring my theoretical training closely to the real situations that take place in company .

From the framework of the research and the gathering of information required, I cultivated on hydrocarbon sector, sector with simple structures and whose role is well defined. I was also able to observe the changes brought about by a reforming regulation and their consequences for the company.

As far as the Sonatrach DRP accounting system is concerned, it does not present any major difficulties, and seems to be well suited to its activity. I noted, however, that there is little room for maneuver by accountants, the majority of whom do information-gathering work and do not care about management indicators. These indicators are reserved solely for the head of the service and for executives, who are only authorized to use them to inform the management of the region of the irregularities observed. This is due to the organization of the company, which divides the roles and responsibilities of each person

During this application period I also have the opportunity to follow the seizure of the charges of the region in the application, which I mentioned in chapter II, I did not encounter any major difficulties if sometimes errors are recorded in the nature of certain charges

The results of the study:

- The cost accounting has been found to deal with all aspects of cost creation, starting with calculating it, analyzing it and studying its changes in a way that serves the interests and objectives of the institution in the future, to be the most profitable and competitive.
- That all these roles are assigned to be one of the most important tools for monitoring the management, as it represents an information system. So that the management control system in turn is fully functional, it depends on the output of the cost and accounting system, to be input it, to the calendar and to correct the performance of the institution and compare results with goals.
- The importance of cost accounting is demonstrated by all established and accepted methods for calculating and analyzing costs, as well as privileges which they provide to serve the path and decision makers. Its importance as a tool is closely related to the various other functions of the institution, through receiving data and providing the

information needed by the internal environment of the institution at all levels, which facilitates decision-making and constantly exercise control

- During my training, I noticed that the cost accounting is in turn a tool to monitor the management in the division of HOUAD BERKAOUI and after my evaluation of the role of cost and accounting in controlling management in functions of Sonatrach, I discovered that the main objective of this monitoring is absent for not participating in decision making. So it's better if he does the role of cost and accounting in management in order to deliver the institution to achieve its objectives, especially maximize profits and reduce costs

Recommendation

- Speed up the rate of information accessing about statistique and accounting
- Implementing a plan for training activities and extra activities to cope with the need of financial direction and the cost accounting division
- The need to raise the awareness of the members of the institution, for need of cost accounting as a tool, encourage them to cooperate and coordinate efforts, and respect all the instructions dictated by the Department through the rotation of awareness and composition, to improve their scientific balance in this field and embodied in the field.
- To give priority to the management of specialists and attention to new frames, and to open the way for them to reflect their knowledge and development, and give a new breath to our institutions.
- To collaborate with other institution and universities to update resources.

Search horizons:

- Introducing the subject in a group of institutions to mainstream the result
- Make an case study in service and financial companies to show the difference

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Appendix

✓ Appendix 1 Menstrual Breakdown Sheet 61

FEUILLE MENSUELLE DE REPARTITION D'ACTIVITE

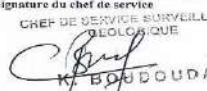
NOM: RAJA
 PRENOM: Mohamed
 FONCTION: Ingénieur Géologue NT
 NOM CONTRAT D'ASSISTANCE TECHNIQUE
 SI AGENT SHDP: N° D'IMMATRICULATION : 92325T

SERVICE: GEOLOGIE
 LIEU: HAOUÏ BERKAOUÏ
 COMPTE ANALYTIQUE : 217421
 DE CONTRAT PARTIE

Mois: Janvier
 ANNEE 2016

CASE RESERVEE AU SERVICE ANALYTIQUE
 CE 61 N°:
 MOIS DE TRAITEMENT: 20
 MOIS DE TRAITEMENT 20

PROJET	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	IMP	OBS
OKS56																																84	5CF222
TOTAL TEMPS PROD.																															84		
TEMPS NON PROD.																																	
CONGE PAYE																															0		
CONGE DE RECUPERATION	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	216		
CONGE DE MALADIE																															0		
JOURS FERIES																															0		
AUTRES																															0		
FORMATION																															0		
TOTAL TEMPS NON PROD.																															216		
Total Cdt																															300		

Signature du chef de service
 CHEF DE SERVICE SURVEILLANCE
 GEOLOGIQUE

 M. BOUDOUDA

✓ Appendix 2: worksheet EC 62

FEUILLE MENSUELLE DE REPARTITION DE L'ACTIVITE

NOM: JULIA YAHIA
 PRENOM: KHELIFA
 FONCTION: Dech. préparation
 NOM CONTRAT D'ASSISTANCE TECHNIQUE:
 SI AGENT SHDP: N° D'IMMATRICULATION: 25457W

SERVICE: Travaux neufs
 LIEU: HBK
 COMPTE ANALYTIQUE DE CONTRE PARTIE: 21752A

Mois: Janvier
 ANNEE 19: 2015

CASE RESERVEE AU SERVICE ANALYTIQUE
 CE 61 N°:
 MOIS DE TRAITEMENT: 19

PROJET	JOUR	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL	IMPUTATION ANALYTIQUE	OBSERVATIONS
Planning du mois		6	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
I/S puits BKH EH																																150	5CF301		
Nouveau bouchier ep/BKH																																34	3CF6811		
Traitement Huile HBK																																35	317624		
TOTAL DU TEMPS PRODUCTIF																																97			
TEMPS NON PRODUCTIF																																			
CONGE PAYE																																			
CONGE DE RECUPERATION																																299			
CONGE MALADIE																																			
JOUR FERIE																																			
AUTRES																																			
TOTAL DU TEMPS NON PRODUCTIF																																299			
TOTAL GENERAL																																322			

Signature du Chef de Service, SH 7 OPR - 602 Y 610 016

BOLE CHEF DE SERVICE
 TRAVAUX NEUFS
 LE RESIDENT
 BOLE INTERPRETE

Signature du Chef de Département ou de Région,

✓ Appendix 3: daily report EC 90

FICHE DE TRAVAIL

OP. N° 24836/24817

REG. N°

DELAI DEMARR. TRAVAIL EN COURS AU TENDRE LE

SECTION: **MNT / Mec**

CLIENT: **Uni. de WL**

MAIN D'ŒUVRE

TRAVAUX

Entretien curatif des unités WL
Intervention sur moteur Perkins
Reparation chaîne de tendeur U6125
Intervention sur treuil camion WL 5077

FOURNITURES		PRO. UNITAIRE	MOYENN. PRIX
NOMBRE ENTRES	QUANTITE		
300			
90			
30			
62			

*N° WL
TS = 5473*

MACHINES OUTILS

EMETTEUR		ATELIER PERFORATION		
DATE	VISA	CONTROLES	PERFORATION	VERIFICATION
26/01/16	<i>[Signature]</i>			

DATE	N° DE DESSIN	COTE MOLE	HEURES FACTUREES	DEBIT COMTE	PHASE	NUMERO FICHE DE TRAVAIL	COUVERTE PARTIE	N° D'ORDRE DE TRAVAIL	TAXE HORNAIRE	MONTANT	COTE PERFO
26/01/16		735	482	217484		CC1100		217771100	600	00000	15000

STRACH - RAPPORT JOURNALIER

PRODUCTION: 24817 E.M.F. M. W. ONE SUR

DECISION DE L'OPERATION: W. ONE SUR

DATE: 16/01/16

COR	N°	DATE	N°	NATURE	QUANTITE	REÇUS	COMPTES ANALYTIQUES	CONTREPARTIE	US
30	106	16/01	735		162	0.00	3 CF 15 000	217480	21

RAPPORT D'OPERATION

Service Ho g 2" 7/8
côte des Caste Ho g 1/2 alorâte 3410A0
Justage avec C.T de compression et
d'axe en alu
Message Vis pointeaux
perforation WL
GC # = 97 mm a 32 840 cc = 3318 WL
GC # = 54 mm a 3506 cc = 3506 WL
GC # = 52 mm a 3276 cc = 3431 WL
cote A 3" x 1 1/2 a 5 bar psi ok
a 1500 psi ok
montage BAP's en cours

N°	DATE	N°	NATURE	COMPTES ANALYTIQUES	CONTREPARTIE	US	MONTANT