



FINAL PROJECT

**CONTROL AND COST MANAGEMENT IN  
REFORMS, REHABILITATIONS AND NEW CONSTRUCTION**

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## ÍNDICE

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1. Introduction.....	2
2. Methodology .....	4
3. General description of the company.....	6
4. Description of the products/serveces offered.....	7
5. Company's structure and organization of the production.....	10
6. System of costs.....	11
7. Cost control and management of materials.....	15
8. Control and management of the labour .....	19
9. Control of the indirect costs.....	25
10. Allocation of costes.....	28
11. Conclusions .....	36
12. Bibliography.....	37

## 1. INTRODUCTION

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First of all I wish to thank for the patience and attention of Julia and Manolo from REHABILITACIONES SL. Julia has a degree in Business and administration. Manolo is an engineer and manager of the company. It should be clarified that for reasons of discretion I changed the real name of the company by the former name. I've been fortunate to find a company that it has reinvented itself during the crisis and it has reviewed its management procedures, I tuned them and therefore I not only have get information, they have helped me to boost the content of the study that I will present.

The work focuses on an empirical methodology that aims to strengthen the contents studied in the subjects of Cost and Management Accounting in a real environment; where the actors change, the student arrives as an active observer and company managers provide information full of experience. Initially this contact was a real shock and thanks to the work of tutoring and the invaluable involvement of the company I have been ordering descriptions, contrasts and proposals

In this sense, the most relevant aspect of the *modus operandi* of the company is the implementation of standards in acceptance of projects and works, the management of the company has been who initially helped me in the understanding of this procedure. Then I have completed to Chapter 14 of the Manual of Cost Accounting Professor Alcarria and other Department of Finance and Accounting of the UJI. The divergence between the approach of the costs studied in class which led towards efficiency, and the "normal" praxis of going directly from cost to price and the result is also highlighted. At the beginning my main concern was obtain dates, excel sheets with numbers. Then I could have a large list of excel with numbers, but when the study was progressing I start to be more interested in the explanations and the answers. I would also like to point out that the company has given me its turnover and dates, but the company is reticent about to show the personal dates at the study.

Noted that the company will improve its procedures, introducing significant changes in the management and control based on the control of direct labour per hour, both for the treatment of personnel costs and for the allocation of manufacturing overhead by applying the budgeted manufacturing overhead rate; in fact, in the next Rehabilitation they will begin to control working hours attributed to the activities. They also will redefine the indirect costs with the goal to reach the Full Cost, improving their cost identification and creating the basis for allocate at the different stages of distribution and allocation.

I would like to saying that the company gave me a practical and motivating learning, and work for the company has been helpful regarding to the efficiency. Now I can distinguish clearly the economic vision of the company, focus on the price, and the efficiency of the procedures.

## 2. METHODOLOGY

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The organization and development work is set to a methodology that seeks to implement content were studied in the Cost Accounting and the Accounting and Management in the productive world, in our case, the reality is embodied in the modus operandi of the company: REHABILITACIONES SL. Thus, the purpose intended by the present study is to describe the contrast between the concepts and procedures studied in those subjects and how to proceed in the environment of the chosen company.

It has motivated the choice of this company:

- Is dedicated to processing activities (they offer services and/or manufacture using indirect manufacturing costs, direct labor and direct materials).
- Willingness of the company to cooperate in this work.
- Willingness to ponder on their own procedures and improve them.
- Friendship with Julia, responsible for the management of the company.

It starts with the first contact with the company to find out the features of the company and how it is organized. Set the idea on the activity and the organization of the company, this will motivate reviewing the contents of the subjects to contrast with reality through the development of an initial guide to the sequencing work. The initial guide is split into thematic questionnaires to collect information from the company in an orderly manner. And finally the answers and recommendations are discussed. In short, the procedure followed was:

- A. Paragraphs 1,2,3,4 form index a block to be completed during the work. This section refers to general aspects of the environment, organization and definition of the business. On the subject content management they correspond to the first chapters.
- B. For the most specific part of cost management, index sections 5,6,7,8,9,10:
  - a) with knowledge of the subjects Cost Accounting and Management Accounting I developed a questionnaire to solve in different visits to the company or by email.
  - b) Develop the study from the responses.
  - c) From the contrast between the answers and the content of the subjects, possible alternatives for improving the management control are suggested.

Methodological Conclusion: This study aims to achieve sufficient empirical justification from its orientation and goal, to achieve that, the study takes as a guide, the own sequence of the contents studied, these are reviewed and contrasted with the way of operating of the company. And the result may be:

- The simple ratification if the procedure applied by the company matches the study.

- The description of different ways to proceed. These will be cause for further analysis.
- The lack of application in the company of a procedure or a criterion proposed from the questionnaire. If signification is detected regarding possible results, the relevant and suitable suggestions will be proposed.

### 3. GENERAL DESCRIPTION OF THE COMPANY

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The company has its origin in the company REFORM SL, which was established in 2000 with headquarters in Benicasim with several partners, among whom was the current manager. Throughout its history the company has maintained the initial corporate purpose, "The construction, rehabilitation and reform of any kind of property," business area it does best is the rehabilitation of façades. In 2004 the company was acquired entirely by the current manager and sole manager, becoming SL Unipersonal (SLU). A change of headquarters also it occurred, they moved from Benicasim to the current address in Castellon Herrero Street.

In 2010 the name is modified, "Reformas" changed to "Rehabilitaciones" with the intention to perform an upgrade to improve the image and the message that is perceived by the name, logo, etc.

In 2013 the scope of the corporate purpose is extended and this adds: "... purchase, development, promotion, intermediation in the housing market and renting (excluding financial) of rustic and urban property".

Other data of general interest:

- Industrial warehouse in P.I. Olives, La Pobla Tornesa.
- It has two vans to transport material and a car.
- There are different types of scaffolding, a crane, concrete mixers and construction tooling.
- Website: www??.

#### 4. DESCRIPTION OF PRODUCT / SERVICE OFFERED

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The company carries out four business areas:

- a) Provision of masonry reforms of housing and commercial premises. It operates as a contractor in reforms that do not generally require a project of an architect. Initially the budget work is accepted by both parties, basing the budget on a measurement also accepted.

Customer position:

- Materials Budget: A detailed list of the expected consumption after the accepted measurement multiplied by the invoice price of materials.
- Budget of work: Measurements of accepted work multiplied by the invoice price.

Position of the company: The difference with the customer is that the company knows how the invoice price is formed.

- The allocation price of materials: The price provided by the material supplier is introduced in the PRESTO program and this gives: Consumption in physical units economy standard of materials ( $ps * qs$ ) to value materials consumption in euro. The invoice price of materials is the economic standard plus a profit margin on it, i.e.:

- Cost of material per unit of the work=  $(ps * qs)$
- Profit per unit of work=  $\% (ps * qs)$
- Price per unit billed=  $(ps * qs) + \% (ps * qs)$

- The allocation price of works: It comes with the same scheme, but applied to the measurement of labor to make an economic standard cost of work that bears the cost of labor, the application corresponding to indirect costs; these are the costs of structure:

- Cost of labor per unit of work
- Profit per unit of work
- Price per unit billed

- b) Management and execution of own promotions.

New building under their responsibility

The execution of the work is subject to the project of an architect.

In this case they work with closed budgets where everything is detailed. It is an approach to implementing standards by both sides. The architect planning and budgeting and the company acceptance of works, one as much of the other make use of their experience and specialized computer programs.



c) Management and execution of alien promotions.

They work as a contractor in new building. It is similar to above but with fewer responsibilities.

Related activities in masonry work referred to paragraphs a) b) c):

- Foundations and structures
- Inner and outer walls (with dread pipes)
- Placement of floor
- Placement of toilets
- Placement of tiles in bathrooms and kitchens
- Plastering with cement
- Plastering with plaster (ceilings are subcontracted)

d) They organized and executed facade renovations

The crisis in the construction sector has shifted the activity of the company to the rehabilitation of facades. Today they have been differentiated from the competitors and experience ensures them a good level of quality. The quality offered allows, sometimes, getting some projects at prices above the local competitors.

As the new work the facade renovations are subject to the project architect. The project is split into the following chapters:

- Works on facades
- Rainwater harvesting systems
- other auxiliary jobs that requires the façade

The three previous chapters are split into the following activities:

- Correction of deficiencies
- Cleaning
- Treatments
- Siding
- Details
- Locksmithery and carpentry
- Waste management (for environmental regulation)
- Security and health

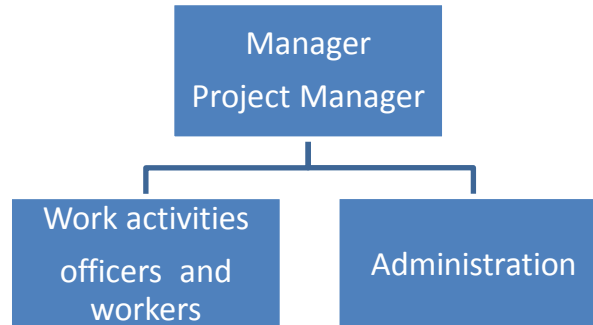
Responsibility in the fulfillment of budgets and deviations: In all areas of business they work with closed budgets, taking responsibility in their normal performance. The accepted measurements determine the billing and work certificates. But it is important that, if at the end of the work, the measurement exceeds the agreement, the customer pays the excess apart. The product description determines the cost system or systems to adopt. Depending on the product features the company uses the following cost systems:

- System costs for work orders
- Standard Cost System for the acceptance of works.
- Actual cost system for controlling the achievements.
- The paragraph a), about the formation of the allocation price, explains that at least for this purpose, the company uses Full Cost Total.

## 5. COMPANY'S STRUCTURE AND ORGANISATION OF THE PRODUCTION

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Initially the company presents the following chart



Moreover, a function of supply, which does not appear in the organisation chart, has been detected in the allocation of costs review.

REHABILITACIONES SL fits perfectly to the work order system because the production is organized to satisfy the demands of each customer. In addition, the production follows an inorganic model.

## 6. COST SYSTEMS

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*It is presented as a reminder-guide:*

*It should reconcile various systems to achieve different objectives:*

*-To evaluate the performance efficiency< Full-cost*

*-To evaluate the economic performance or to fix prices< Total Full-cost*

*-Normal Cost with application budgeted rate of manufacturing indirect costs to assess finished works (trabajos por administración)*

*-Standard Cost for project acceptance or anticipate prices*

*-costs for activities to improve the relationship between performance and causes of the costs.*

### GUIDE QUESTIONNAIRE - COST SYSTEMS

1. Does the company control and manage the production costs?

2. Which control and management of cost systems does the company have implemented?

3. How many cost systems do the company use?

4. Does the company make the distinction between fixed and variable costs? Does it do any type of analysis?

### ANSWERS:

1. Does the company control and manage the production costs?

The company controls the actual cost, from accounting expenses route to the different works. When at the end of the year, the total actual cost of the proposed works is known, and more less the actual costs of each separately work is also known.

The cost management is subject to the control of the certificates. In general it work with closed budgets with details in the stages of implementation and the corresponding work certificates agreements. The certifications are reviewed and formalized monthly as far as, fully or partially, the work has been completed and documented correctly.

2. Which control and management of cost systems does the company have implemented?

The company don't use too much documents and procedures that support the internal control of operations. The manager uses the project work as a guide of control and his own annotations. The responsible for data management asks him when dates about the work done are required.

The company works with three cost systems:

a) Expected/Standard costs to budget all kinds of works and also to accept projects.

- The use of the estimated cost is based on very detailed lists. The result depends on how the work is completed and submitted. In these lists, units are called measurements of work, and they are the referent.

- The budgeted assessment is done by software PRESTO. The application is based on measurements (qs, hs, us) prices and rates (ps, ts, cs) and valuations (economic standards) applied and generally accepted by the industry. Normally, the valuation is summarized on the economic standard apply on measurements.

b) Normal cost on a **cost-plus basis**. It is proposed for the assessment of reforms. When the reforms are completed, both the real cost of materials consumed and the estimated cost of the work done are imputed. The estimated cost of the work done is calculated applying a predetermined rate. The rate includes all costs, direct labor, direct material and manufacturing overheads.

At the beginning, Normal cost system was discarded because they preferred applied the standard cost. After my explanation about the usefulness of Normal Cost with budgeted manufacturing overhead rate (BMOR), the company assessed the possibility of using it in what they called work by cost-plus basis (working without a budget and billing based on actual consumption of factors), all to increase the diversification of service and to gain "demanding costumers ". The work by cost-plus basis is posed as follows:

- a. For the customer: When a reform is agreed, the customer accepts a price of billing for the actual hours of work and the cost of materials consumed to the price invoiced by the supplier (or if the costumer prefer he/she can provide the material).
- b. For the company: The price billed for the actual hour of labour assumes the cost of labour, the appropriate allocation of indirect costs, the allocation of structural costs and budgeted profit margin. For its implementation it is necessary to advance at the beginning of the year:

- Activity budgeted measured in hours of work..... Hb hours

- Budgeted total cost..... TCb €

- Direct Labour budgeted.....DLb €

- Manufacturing overhead budgeted..... MOb €

- Structural cost budgeted..... SCb €

>>budgeted total cost rate =  $TCb/Hb$ = total cost to allocate per hour of labour to bill= BTCR

>> The profit margin is a percentage of the total cost (% BCR), thus:

>> Billing price per budgeted hour =  $BCR + \% BCR$

>> Billing of a finished reform:

The reform has been worked with actual hour =Ha

The actual cost of materials consumed= DM

The company use a budgeted rate for the rest of costs=BCR

Normal cost of the order for the company:

+ Actual Direct Materials allocated..... DMa€

+ Costs allocated for the order=..... Ha+ BCR €

= Normal cost of the order to be billed

**Invoicing of the completed order**

+Actual allocation of materials consumed.....DM €

+work done =..... Ha\*(BCR + % BCR) €

Tax base	Amount €
<u>VAT</u>	<u>VAT€</u>
Total bill	Total €

In the procedure above, it has been applied Full-Cost Total for the purpose sought by the company (get the total price), but presented in a sequential way in order to provide an analytical view and to be able to locate deviations by comparing the normal cost with the actual cost at the end of the year.

Full Cost Total is used to price fixing, and if this is the only objective, it resolved faster as the sum of all costs of the company (it can be obtained directly from the accounting), which the company called "sounding "(I have been informed that it is traditional way to calculate the cost).The company recognizes that sometimes has been operated in a similar way but using an billing price estimated by a "reasoned" and very close to "normal" market score. It was discussed that the way how the company proceeds is very fast and effective, but the risk is hidden.

c) Normal cost applied to the monthly assessment of the work done. The evolution of the provisional result is analysed by tracking works monthly. Indirect costs based on the historical (2014) are allocated to the provisional result, you have to remember that for the company everything that is not direct it is indirect, and the cost of the direct labour (DL) is taken as a factor of costs (and also with the historical of 2014).

d) Actual cost of the works at the end of the year (explained in section 1 above).

### 3. How many cost systems do the company use?

In that question there is the greatest divergence between the fundamental in classes of accounting, the Full Cost, and the pragmatism in the real world of small business, the Total Full Cost. But there is no discussion, in that company, both the chief executive and responsible for the data management are interested in improving internal control and the cost system to get the price, but first analysing the efficiency, the control and making the distinction between production costs and general expenses, between direct and indirect cost of the works and activities.

The chief executive analyses the deviations, so there is a comparison between the actual cost and budgeted cost that he get from standards of PRESTO program.

At the operational level there is an approximation of the cost per activities (structures, walls, plastering, tiling, floor...). Each accepted work is defined by its own activities in a New Home Development there are all the activities, however in reform or rehabilitation there are a few.

Until now the company does not make the comparison of the monthly statements prepared by using the budgeted total costs rate (BCR explained before) and the actual cost. Later, after the determination of the actual cost to 31/12, there is a proposal of representation and analysis. This information they want to improve this year.

### 4. Does the company make the distinction between fixed and variable costs? Does it do any type of analysis?

They distinguish the fixed costs because they know how to locate the fixed assets and the calculation of annual amortization.

I liked the following sentence that said the manager: "The fixed and variable costs are well understood when jobs are scarce." From her I realized that for him, in addition to amortization, costs of maintaining business premises, some taxes and the salaries of at least 3 of the (regular) skilled worker and the salaries of administration and management are the most important and relevant costs, they belong to the fixed costs. Within this dynamic, sometime it is closed to the threshold of profitability calculation.

## 7. COST CONTROL AND MANAGEMENT OF MATERIAL

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### GUIDE QUESTIONNAIRE OF CONTROL AND MANAGEMENT OF MATERIALS

#### 1. Identification of materials IN THE WORKS:

- Materials in reforms
- Materials in rehabilitations
- Materials in their own promotions

#### 2. Does it distinguish between direct and indirect materials?

- Description and control of direct materials
- Description and control of indirect materials

#### 3. Which inventory control system it has adopted?

- Periodic inventory:
- Permanent inventory:

#### 4. Which is the method of stock valuation?

- FIFO.
- WAP (weight average price).

#### 5. Supply and demand for materials.

#### 6. Documents and control in purchases

- Direct
- Indirect

#### 7. Documents and control of consumption of materials

- Direct
- Indirect

#### 8 Is the wastage treated?

#### 9. Costs related to procurement management

#### 10. How does it manage the procurement?

### ANSWERS:

#### 1. Identification of the material with the works.

At least in its format, the materials are different in each of the business areas:

- On reform of housing and commercial premises the materials are adapted to customer requests and its justification conforms to the materials consumption.

The materials more used in this business area are: Water, bricks, bagged mortar, different types of cement glue and plaster, porcelain stoneware, different wall coverings and gloves, helmets and other accessories.



- In the facade renovations the materials are used and applied as described the project that was signed with the ownership of the property and it is under the responsibility of the architect.

The materials more used in this business area are: helmet, gloves, water, special mortars bagged (with adherence and as waterproof), special sealants, polyurethane, exterior paints, linings against leaking and different parts of stormwater drainage systems.

- As in the rehabilitation, the materials in their own promotions are determined by the construction project. This business area is different from the reforms because the volume of activity is different and because it includes the stage of foundation and building the structure. The format of the supply is greater, less bagging, more bulk and paddling. The gravel and iron are significant materials in the structure.

Note: helmets, gloves and work clothes in class were considered staff expenditure.

## 2. Does it distinguish between direct and indirect materials?

- Description and control of direct materials
- Description and control of indirect materials

Overall Response: No distinction between direct and indirect materials. This is based on the assumption that the materials are required from a particular work and therefore are direct materials.

Control is done basically with the delivery note confirmation in the reception of materials, at that moment is added the location for the identification in a concrete work. If there is no delivery note in the invoices, the person responsible of provisioning has to identify its location in document.

## 3. Which inventory control system it has adopted?

Inventario periódico: Lo realizan a final de año para los ajustes en la contabilidad.

Periodic inventory: It is made at the end of the year for accounting adjustments.

Permanent inventory: there is no inventory control to establish the consumption of materials. As suppliers allow them to return the excess material, the consumption is determined by the difference between the invoices and amendment invoices of returns. Consumption is also identified in the construction certificates by the actual evidence in the degree of realization that requires certification.

## 4. Which is the method of stock valuation?

- FIFO. It is not used
- WAP (weight average price). It is used at the end of the year and generally

## 5. Supply and demand for materials.

The process that follows is the matching of delivery notes and invoices with the works (explained before).

## 6. Documents and control in purchases

- Direct
- Indirect

As has been already described, it does not distinguish between direct and indirect, but the questionnaire is intended to be reference and this suggests the company greater control. The control is exercised through the acceptance of the delivery note and / or invoice with confirmation of identification and location cost.

## 7. Documents and control of consumption of materials

- Direct
- Indirect

The company does not exercise internal control of consumption. It can be concluded from the above explanations, the consumption results from the matching of delivery notes and invoices and returns.

## 8 Is the wastage treated?

The wastage is not treated. Externally, the suppliers permit a small margin of compensation if there are defects and damage on materials and it is very significant. If the cause of the wastage on materials is the own handling it is assumed as higher consumption (higher cost).

## 9. Costs related to procurement management

### 10. How does it manage the procurement?

The provisioning function is done jointly by the Administration, the business manager as a responsible of the project and a responsible of construction.

The cost of supply management is treated by the company as implicit cost in the overall costs; it does not distinguish that function as a manufacturing overhead, and therefore it is not allocated in the different works

Recommendation: to improve the assessment of production efficiency and the efficiency of the administrative burden (costs of the organization as a higher level), the company has to proceed to implement a procurement section as supporting or production-related services. This would involve a transfer of corporate costs (General Administration) and part of the function entrusted to the new procurement function. The accumulated cost in Procurement Section are manufacturing overhead costs that are allocated between different activities and works (what is studied as secondary allocation costs)

## Materials control

Supplier Invoice number	Note	Type of material	a,b,c d,e	Total	Work-1	Work-2
Peris SA, Invoice 45	28	concrete block 10x50	b4	1.210	---	1.210
.../...						
<b>Total January</b>						
Bricomas, Invoice 111	65	cement	c1	840	310	530
.../...						
<b>Total February</b>						
.../...						
.../...						
<b>Total ANUAL</b>						

- Supplier and receipt come from accounting information
- The specification is referred to the number of accounting (relates to file)
- Material Description
- A, b, c, d, e ... identification code to facilitate material accumulations.
- The Excel is enlarged or reduced according to the annual works.
- \* Applying filters in Excel you can make calculations on types of materials

## 8. CONTROL AND MANAGEMENT OF PERSONNEL COST

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### QUESTIONNAIRE OF CONTROL AND MANAGEMENT OF PERSONAL COST

#### 1. Cataloguing of company staff

- Administration
  - Personnel
  - Type of contract
  - Schedule and dedication
- Works
  - Personal
  - Type of contract
  - Schedule and dedication
- Reference to the collective agreement
  - Weekly working hours
  - Holidays
  - Public holidays

#### 2. Identification of personnel costs.

#### 3. How can the company allocate personnel cost on the activities and works?

#### 4. Does the company distinguish between presence time, idle time and normal time?

Presence time.

- Monitoring presence time.
- Control of working time (regular).
  - Daily work report.
  - Others
- Control idle time.
  - Normal idle time.
  - Abnormal idle time.

#### 5. Does the company have overtime hours?

- Reasons for its realization.
- Evaluation of overtime hours.

#### 6. Assessment of work:

Does the company use the rate of cost per hour in the allocation of personnel costs?

When does the company calculate hourly rates?

How does the company calculate the rate of cost per hour?

- Numerator
- Denominator

Does the company use hourly cost rates for each worker?

Does the company use the rate of cost per hour for groups, activities or sections?

7. Treatment of personnel costs relative to cost object:

- Control and description of direct labour (DL):
- Control and description of the indirect labour (IL):
  - Adjustments of the DL in support functions and activities.
  - Cost of normal idle time
  - The excess cost of the overtime hour on the rate of cost per hour for reasons of standard setup of the personnel.
- Personnel costs are treated as overall cost or losses of the period.
  - Cost of abnormal idle time
  - Cost of the administration

8. How does the company raise and solves the adjustment between staff and business volume? In general, does the company adjust the production capacity of the personnel or is personnel who adjust to production?

ANSWERS:

1. Cataloguing of company staff

Administration

- Personnel: The manager (part) and the responsible administration
- Type of contract: permanent staff
- Schedule and dedication: 40 hours per week

In the works

- Personnel: Fixed staff is always at least 2 officers and 1 labourer. The staff has come to reach 9 workers (3 groups of 2 officers + 1 labourer).
- Type of contract: Permanent contracts for permanent staff and temporary contracts for the rest
- Schedule and dedication: 40 hours per week, holidays and vacations according to the sector agreement. The company is closed in August.

2. Identification of personnel costs.

Treatment of personnel costs relative to cost object:

- DL description: They are labourers and officers that carried out various activities of masonry. They are organized by groups of 2 officers and a labourer.
- MOI description:
  - The company do not take the administration as a cost of structure (Full cost), the administration cost allocated as a general indirect costs (full Total cost).

Proposal: For provisioning functions and control of works, the company should consider transferring part of costs of the Administration to the production cost.

- The company takes the management of construction as overall indirect cost.

Proposal: It should be recalled that manager assumes the functions proper of the financial management. That function requires allocating on the cost of the Administration and it should not be attributed to the cost of the works.

- Labour of support activities. The labourer is who assumes these activities (cleaning, go to places, checking...).

- Supervisión y control del personal. Hasta 2014 hubo encargado de obra que hacia las tareas de oficial y la supervisión. Actualmente, es el gerente quien realiza estas funciones. Si se recupera el nivel de actividad uno de los oficiales ejercerá la supervisión (en parte ya lo hace).

- Supervision and control of staff. Until 2014 there was foreman that was working as an officer and as a supervisor. Currently, it is the manager who performs these functions. If level of activity is become higher, an officer will do the supervision function.

- Cost of normal idle time. It is not control.

- The excess cost of the overtime hour on the rate of cost per hour for reasons of standard setup of the personnel. It is not control.

- Personnel costs are treated as overall cost or losses of the period.

  - Cost of abnormal idle time. It is not control, all count as a work time

  - Cost of the administration. It has been already mentioned, it should adjust crossings the cost of time of the procurement and the other supporting activities of production.

3. How can the company allocate personnel cost on the activities and works?

Remember that the company operates with closed budgets in all the works it performs, that is, the works are agreed from a budget that the parties agree; and this budget sets the standards to assess the work done to bill monthly. At the same time, it also keeps track of the actual cost

- The allocation of labour in the budget is done directly applying economic standard (ts \* h) to the initially contracted activity (baseline measurements). However, it is important to know the budgeted rate (ts) and technical standards (hs). These measures and standards are obtained using the PRESTO computer program.

- The responsible of the management controls the actual cost of labour asking weekly to the foreman or the manager-director of work. At the end of the month the company budgets a coefficient of direct labour referred to each work by using the information of work done, and sometimes with reference to the different activities. The monthly cost of

the direct labour attributable to each work is determined multiplying the monthly expenses of the direct labour and the coefficient of the works done

- At the end of the year the manager determines and analyses the deviation in labour
- In general, the hours of DL per worker are not controlled; the company operates by days, weeks and months. Only the hours are controlled when the company accepts cost-plus basis (explained in cost systems).

4. Does the company distinguish between presence time, idle time and normal time?

- Presence time. For the company all presence time is actual work time
- Monitoring presence time. No control
- Control of working time (regular). It is exactly the same that presence time
- Daily work report. The company use daily reminders and weekly global reports per work (excel). The report is not working properly as I studied in class, detailing tasks and times.
- Control idle time. In The Company only the sick and accident is controlled.
- Normal idle time. No control.
- Abnormal idle time. No control.

5. Does the company have overtime hours?

- Reasons for its realization. To complete activities and to finish works according to the working schedule.
- Evaluation of overtime hours. No criteria

6. Assessment of work:

Does the company use the rate of cost per hour in the allocation of personnel costs?

The company operates in the economic standard (hs \* ts) provided by the program PRESTO, after the economic standard can be applied to measurements of the budget, or to accept the projects.

When does the company calculate hourly rates?

Until now, the company did not calculate them; at the beginning of the year the company did not calculate the budgeted rate and at the end like the company did not calculate the actual rate.

How does the company calculate the rate of cost per hour?

The PRESTO program provided data about personnel costs and annual hours, then the manager sets its own rate, in addition the manager can work with general industry standards. The manager works with a match between his data and the general industry standards.

Does the company use hourly cost rates for each worker?

PRESTO calculates an average of economic standard (hs \* ts) of the official worker and another one for the labourer.

Does the company use the rate of cost per hour for groups, activities or sections?

Again, PRESTO uses an average of economic standard ( $hs * ts$ ) for the cost of a particular activity or for a group of workers (e.g.: € / m<sup>2</sup> of plastered wall with official-labourer combination)

Summary: The Company does not determine the hourly cost rate, neither the budgeted or the actual. The company uses the program PRESTO with estimates adjusted data. The program allows allow you to use individual and aggregated standards.

7. How does the company raise and solves the adjustment between staff and business volume?

The minimal activity in terms of annual budgeted work fits the work that the company can do with the minimum staff, the three permanent employees (2 construction workers and 1 helper). From here on, the number of workers will be adjusted according to the volume of work that is contracted.

Simplified case: The company has minimum workers of 2 construction worker and 1 helper and the aim of the company is only the wall construction with 20x40 blocks. The program informs that:

- 12,5 blocks per m<sup>2</sup> →  $qs$
- Price for PRESTO of the brick is between 0,42 – 0,45 →  $ps$  PRESTO=0,44 €/ud.
- The price that makes your supplier is 0,42 €/brick →  $ps$  to allocate
- Economic standard of materials =  $qs * ps = 12,5 \text{ u/m}^2 * 0,42 \text{ €/ud} = 5,25 \text{ €/m}^2$
- Profit margin on materials is 20% of the cost
- PRESTO's collocation time is between 0,55-0,8 hour/m<sup>2</sup> →  $hs = 0,6$
- Coste per hour of labour (Total Cost: DL+ Manufacturing overhead + Structure Costs) is between: 18-20 €/h →  $ts$  ¿?
- $ts = 20 \text{ €/h}$  ; budgeted rate for Works with closed budget
- $ts = 18 \text{ €/h}$  ; budgeted rate for cost-plus basis works
- The  $ts$  for Works with closed budget are higher because it is more risky.
- Economic standard on Works with closed budget =  $hs * ts = 0,6 \text{ h/m}^2 * 20 \text{ €/h} = 12 \text{ €/m}^2$
- Economic standard on cost-plus basis works =
- Profit margin on the work is 25% on the cost
- Budgeted time presence =  $3 * 1.800 \text{ h} = 5.400 \text{ h}$
- Time of DL =  $5.400 - 300$  (Estimated Idle time) =  $5.100 \text{ h} = Hp$
- Budgeted activity =  $5.100 / 0,6 = 8.500 \text{ m}^2 \text{ año}$
- 8.500 m<sup>2</sup> is the actual work done by 3 workers =  $Ap$
- Price billing of work =  $12 + 0,25 * 12 = 15 \text{ €/m}^2$



→ Price billing of materials =  $5,25 + 0,20 * 5,25 = 6,30 \text{ €/m}^2$

→ The Budget for a Wall of 100 m<sup>2</sup> will be:

Materials for 100 m<sup>2</sup> \* 6,30 €/m<sup>2</sup> = 630,00 €

Labour for 100 m<sup>2</sup> \* 15 €/m<sup>2</sup> = 1.500,00 €

taxable base VAT 2.130,00 €

VAT 21% 447,30 €

2.577,30 € (Customer information)

8. In general, does the company adjust the production capacity of the personnel or is personnel who adjust to production?

The question has been answered in the previous point.

#### TABLES OF MONTHLY ALLOCATION OF DL THAT THE COMPANY USE

- Remember that control accumulation of weekly estimates, and parts of daily work with time-activity information.

- The accounting tells you the cost as an expense from the records of monthly salaries and wages (640) and the Social Security monthly Company (642).

DL COST	January	February	March	(...)	Dicember	Total
wages						
social security						
<b>Total mensuales</b>						
Work-1						
Work -2						
Work -3						
(...)						
Amount						

## 9. CONTROL AND MANAGEMENT OF THE INDIRECT COSTS

### QUESTIONNAIRE GUIDE FOR MANAGEMENT AND CONTROL OF THE INDIRECT COSTS. ANSWERS

#### 1. Identification of the indirect costs.

- How does the company identify the manufacturing overhead costs ?

In general, the company considers as indirect costs all the cost that are not direct. It does not represent any problem to fix the prices. But, the rating .....from the cost of the work regarding the production efficiency.

The chapter 6 about the Cost system, tells that the company operates with Full Cost Total.

- The latter considers only one group of cost which consists of all the overall costs (general, administration and structural ones). Thoses include the indirect costs linked with the production (electric distribution of the works, amortization of the scarffolds, etc) and the periodic costs (electric distribution of the administration, amorzation of the commercial and administration local)

- The company distinguishes few indirect costs calculated : thoses which are coming from the internal criterias (example : normal inefficiancies).

- The major part of the indirect costs are identified as structural costs. This means the expenses from the group 6 of the General Accounting Plan that are not purchases neither works from others companies (subcontracted).

The identification is based on the delivery note or the bill. The general accounting directs the bill to the real cost of the work, the bill can be used for one part of the work or overhead cost of the totality. It seems to be contradictory, but regarding the recommendations for implant an activities system cost, the latters would be lots'costs.

Analysis and proposals about the costs considered by the company as indirect (overhead) :

- Indirect materials.

We explained in the part about the materials that the company do not propose the materials' identification, management and control of those. But there are others supplies which can be consider as indirect material (such as cloves, wire, lubricant, others accessories...)

The company does not deal with the material losses, that is the reason why there are not normal losses treated as indirect materials.

- Indirect labour

- Normal inefficiency cost

The normal inefficiencies due to materials and labour force were explicated in the two last items.

Normal cost of defective production

- The company do not distinguish the normal and anormal defective production. They treat every defaults as a normal one.
- It is not possible to bill or to certify defects that exceed the quality standarts agreed beforehand.
- The Company treat as the biggest work cost all the reprocessing cost.
- After the work delivery, defects can appeared.
- Normal cost of the definitive damaged production
  - The damaged production is a definitive situation, it is not possible to certify or bill it.
  - It occurs a cost of disposal for the company. This additional cost is considered as the biggest work cost.
  - Comment : Especially in terms of defects, the company operates in a similar way as, what we call, theory of negligence.

-Environmental cost

It is an obligation for the company to deal with the waste management. This is established in every project of facade rehabilitation or new projects. They are legal imperatives.

- Overall costs:

- Lease (equipment)
- Repairs and maintenance (administration, storage, equipment, work place, vehicules).
- Independent Professional Services (from legal and technical advice)
- Transportation
- Insurance premiums (in administration, storage, equipment,work place, vehicules)
- Banking services (in administration)
- Advertising and public relations(in administration)
- Supplies (in administration, storage, equipment,work place, vehicules)
- Others services
- Taxes (impost)
- Others current handling losse (inventory difference of tools)
- Finance charges (included by the company)

- Amortization (Details)

2. Control y location of the indirect costs.

The company does not have any internal control system to manage manufacturing overhead cost.

After recording the transaction in the general ledger, as explained before in "Identification of the indirect costs", the bill is transferred to direct cost of the work if it corresponds ; or to an Excel of the manufacturing overhead costs to distribute it to all the works.

The company calculates the manufacturing overhead (amortization...etc) at the end of the year.

3. Manufacturing overhead cost allocation. Does the company is making groups of manufacturing overheads ? Does it make overhead rate ? Which cost factor basis does it used for the control and allocation of the manufacturing overhead ?

The company makes only one group of the indirect costs. They use as cost factor basis, the labor force direct cost.

The manager calculates and uses a budget manufacturing overhead rate (predetermined) to applicate the manufacturing overhead cost for the monthly allocation of work performed indirect costs.

The company bases its calculations on the "historic" indirect costs and " historic" costs of direct labor.

The manager enters the datas in the following program : PRESTO to get the Standard variables to apply budgets. The result is similar and the manager also uses the direct labor cost as allocation basis.

4. Analysis and treatment of the deviations

The manager detects budgetary deviations, especially related to the labour force and wors, but he does not revise the effects of the over-application and under-application.

To be more conclusive in the deviations analysis, it's necessary that the company improves the identification of the indirect costs. Moreover, the company should separate the administration costs, the financial costs and others periodical cost.

The deviations details will be exposed latter.

## 10. COST ALLOCATION AND COST PRODUCTION DETERMINATION.

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### QUESTIONNAIRE GUIDE FOR COST ALLOCATION

1. Identification of the departments and business areas of the company.
2. Table of primary distribution
3. List of business costs and distribution factors for the primary allocation
4. Table of secondary distribution
5. Final Production Cost

At this point of the work I already know how the company realises the imputation, therefore, I was about to do not present this questionnaire guide in this chapter.

But the company managers request me to complete the approach. One more time, it was a good advice. Without any questionnaire guide, it would limit us to a simple description of the imputation procedure ; without any contrast with all the things we studied at the university.

This questionnaire guide allows us to follow the methodological support of this project. However , since the process does not match with the theory studied, we propose the following order :

First of all, We are going to describe how does the company proceed. And then, from the questionnaire guide, we are going to present the alternative proposals. Those are going to be the basis for the remodelling of the control and management system .

#### **a) Company imputation procedure**

##### MONTHLY TABLE FOR WORK CONTROL

The table represents the cost evolution, the certifications and the results of each work separately (monthly).

To calculate the imputation every months, the company uses the Predetermined Normal Cost System with a budgeted manufacturing overhead rate :

- Numerator : the "**historical**" **indirect costs** (previous year total). We should notice that it is not a precise budget, but an interpretation based on the previous year of what should happen.
- Denominator: the "**historical**" **costs of direct labour**. Therefore , the cost of the direct labour is taking as based factor of the imputation of indirect costs. It is not a budgetary approach. The same activity cost as the previous year is expected. Next year, the basis factor for allocation will be the hours of the direct labour. It would be better, in my point of view, to change the expression "*HH*" (man hours), for obvious reasons these days.

>>> Budgeted manufacturing overhead rate ("*TPACI*") = Historical indirect cost / Historical cost of the direct labour

>> The magnitude results from € of the indirect cost / € of the direct labour cost.

For the application of the Normal Cost System (first lines of the monthly control table):

- The actual cost of the direct materials works is attached. The data of the general accounting record go to an Excel table of the work imputation (cf p.16)
- The actual cost of the direct labour is attached (cf table p.22).
- The indirect costs are calculated thanks to the previous predetermined rate multiplied by the cost of the preceding line (actual cost of the direct labour)

Monthly table of the work control-1 (do not forget to specify if it's in process or finished!)

Monthly statement	January	February	March	()	Dicember	Total
Materials						
Work done by other companies						
DL						
Budgeted overhead cost						
C.Normal work-1						
Work certification						
(-)Normal cost work-1						
Provisional result						

The works made by others companies are subcontractors.

## CONTROL OF THE ACTUAL WORK COST

Informaion channels:

- Account balances at the 31<sup>st</sup> of December of the group 6 of the General Plan.
- Calculated costs. The company uses Excel models to accumulate the costs to specific activities of the works, for amortization and inventoried items.

The company calculates and applicates an actual rate of indirect costs :

>> "TRAC" = Actual Indirect Cost Accumulated/ Actual Direct Labour Cost

Actual Cost. State of the work on the 31<sup>st</sup> of December

Annual State	Total	Work-1	Work -2	Work -3	(...)
Specify work in process or finished					
Materials					
Work done by other companies					
DL					
Budgeted overhead cost					
Actual cost of the work					
Total certificated of each work					
(-)Normal cost work-1					
= Result per work					

Cost adjustments of Works	Total	Work-1	Work -2	Work -3	(...)
Actual cost of the work					
(-)Normal cost work					
= Desviations (under/overallocated)					

If the result is positive :

- The cost deviation was unfavorable.
- Under-application of the cost during the economical exercise.
- Monthly expected results have been overrated

If the result is negative

- The cost deviation was favorable. Less costs occurred than it has been applied during the year.
- Over-application of the cost during the year.
- Monthly expected results have been underrated

## CONCLUSIONS ABOUT THE WAY TO IMPUTE THE COMPANY

The company adopts the Full Cost Total. That allows her to make it compatible with a pure Work Orders System, without imputing costs to any department. In general, the company is effective and gives a fast answer.

Although the company uses Excel to manage some work activities that they need to monitor; they do not develop any real control and management of these activities.

The company recognizes that to ensure good performance in business, they should improve the cost allocation for activities, and implement the Control of working hours for each activity.

### **b) Proposal about the distribution and costs allocation.**

The company is going to apply a new form of control and management for the next rehabilitation work. But it is going to finish 2015 with the previous system.

The two main causes that are proposed as catalysts of change in control and cost management are:

- Implant the Full Cost System as a basis for the cost identification of the product. It is compatible with
  - The Full Cost Total for determine the billing rate.
  - The Normal Cost (predicted and actual) from the manufacturing costs, not from all the costs.
  - Define activities, business areas, support departments and assign it its corresponding costs. In REHABILITACIONES SL there are physically the general administration, and ,covertly, provisioning, construction management and maintenance.

The provisioning is an manufacturing indirect cost. This cost is performed by the administration. The latter is going to make a costs transfer from administration to provisioning. The director is making the construction management , therefore he will charge transfer the costs of these activities.

The workers, in case of rain or time-out, use the time for the activities of maintenance. This is going to produce a cost transfer from direct labour to maintenance activities.

- Standard variables calculated with a focus on efficiency.
- Use of the direct labour hours as a basis for the allocation is going to permit :
  - Define the expected activity from the direct labour hours which provides to perform (budget approach  $H_p = \text{time of presence of the three fixed operators} - \text{idle time predetermined of the 3}$



(1.800 hours of presence and 10 days of non presence >> Aprox = 3\*1.800

-

3\*10\*8)

- Use the direct labour hours for the imputation of the direct labour and the manufacturing overhead cost.
- Assess the direct labour cost and the manufacturing overhead cost of the activities.
- Improve the deviations' studies

We can apply imputation phases studied at the university to REHABILITACIONES SL with the antecedent changes :

- Primary distribution
- Secondary distribution
- Works Imputation

**c) Proposal of primary distribution**

Consists on allocate all the informations on accounting expenses and cost calculated internally to the different areas of the company activity.

The following areas of activity are proposed:

- Works. Represent de production area.
- General administration. For being a small company, the administration makes a lot of things : Treasury, financial management , accounting and management in general and, also supports the provisioning.
- Provisioning. It is created with the new proposal and as explained previously
- Maintenance. It is created with the new proposal and as explained previously

The company has to define the criterias of primary distribution fot all the costs. When there is no cause, the hours of direct labour are applied by default. But the heaviest criteria is the manager option.

Allocation table (criterium)

Indirect Costs- criterion	Total	Procure-ment	Mainte-nance	Works	Admini-stration
Indirect Materials-Cost of Direct Mater.	Fort the moment they do not control				
Manager director – dedication	100%	15%	5 %	40%	40%
Manager data responsable - dedication	100%	20%	-	-	80%
Indirect Labour (IL in Mainten.)	100%	-	100%	-	-
Indirect Labour (IL in Procure.)	100%	100%			

Indirect Labour (Normal idle time)	100%			100%	
Leases	100%	-	-	100%	-
Repairs and maintenance-by location	100%	Apr%	M%	O%	Ad%
Professional Services-by location	100%	-	M%	O%	Ad%
Insurance expenses-by location	100%	Apr%	M%	O%	Ad%
banking services	100%	-	-	-	100%
Advertising Advertising and Public Relations	100%	-	-	-	100%
Water supplies – by location	100%	Apr%	M%	O%	Ad%
Electric supply – by location	100%	Apr%	M%	O%	Ad%
Supply-phone-ADSL	100%	-	-	-	100%
Taxes on warehouse and headquarters	100%	Apr%	-	-	Ad%
Taxes, licenses	100%	-	-	100%	-
Corporate income tax	100%	-	-	100%	-
Tooling inventory losses	100%		100%	-	-
Financial expenses	100%	-	-	-	100%
Amortization of vans	100%	80%	20%	-	-
Amort. vehicles for people	100%	-	-	100%	-
Amort. in general - by location	100%	Apr%	M%	O%	Ad%
Reprocessing costs (not distinguish abnormal)	100%	-	-	100%	-
Damaged production (not distinguish abnormal)	100%	-	-	100%	-

Table of the primary distribution (With Excel, it is linked with the imputation table). Consists in transferring to the totals the balances and the Cumulative amounts calculated on the 31<sup>st</sup> of December ; and apply the distribution patterns of the above table.

Table of the primary distribution

Costes Indirectos	Total	Procurement	Maintenance	Work	Administration
Indirect Materials					
Manager director					
Manager data responsible					
Indirect Labour					
Leases					

Repairs and maintenance					
Professional Services					
Insurance expenses					
Banking services					
Advertising Advertising and Public Relations					
Water supplies					
Electric supply					
Supply-phone-ADSL					
Taxes on warehouse and headquarters					
Taxes, licenses					
Corporate income tax					
Tooling inventory losses					
Financial expenses					
Amortization of vans					
Amort. vehicles for people					
Amort. in general					
Reprocessing costs					
Damaged production					
TOTAL FIRST ALLOCATION					

**d) Proposal of the secondary distribution**

With the Full Cost System, all the cost have to be accumulated in the areas of production and general administration, at the end of the process (31/12).

Finally, it arises the works imputation.

During the secondary distribution we transferred the provisioning and maintenance costs to the main areas, Works and Administration. In our company, Administration has not received any ancillary service , therefore all maintenance and provisioning costs are transferred to Works.

What for ?

- To recognize and assess some activities that are taking place
- To impute to the product, costs that otherwise the company would be considered as Administration costs. The Manager and the responsible of the administration participate at productive activities.

- To impute as indirect costs the direct labour costs in provisioning and maintenance which improves efficiency and reduces deviations.

Comment : This company is not going to make it, but in the major part of the companies Cost transfers in Provisioning are controlled and measured in terms of the services provided. The maintenance ones are based on the control of time service.

Comment: Reciprocal benefits or equation systems are not treated for the distribution.

	Total	Procure-ment	Mainte-nance	Work	Admin
TOTAL FIRST ALLOCATION	XXX	Procure	M	W	Ad
<b>SECOND ALLOCATION</b>					
Aprovisionamiento	0	(-) Procure	-	+ Procure	-
Mantenimiento	0	-	(-) M	+ M	-
TOTALES	XXX	0	0	W+Pro+M	Ad
TOTALES	XXX	0	0	W+Pro+M	Ad

→ W+Pro+M = Manufacturing overhead

#### e) Proposal of the imputation to work.

The material direct costs and the direct labour cost go to the respective works based on control exercised during all the year (as exposed in the previous chapters).

The manufacturing overhead costs of the table of secondary distribution are allocated to each work in proportion to hours of direct labour. The hours are controlled on every work or by calculating the actual application rate of manufacturing overhead cost "TRACIF" (TRACIF= (O+Apr+M)/Total hours direct labour).

For the last time, I insist on the need to implement internal control in general ; and on the direct labour in particular. De factor, the manager was always concerned by the direct labour cost as the worriest deviation.

#### Table of the imputation to works

	Totals	Work-1	Work -2	Work -3	(...)
DM cost	Total CM	DM-1	DM-2	DM-3	(...)
DL cost	Total DL	DL -1	DL -2	DL -3	(...)
M. overhead (secnd. Alloc.)	O+Apr+M	MO-1	MO-2	MO-3	(...)
Total COST	Total	Total-1	Total-2	Total-3	(...)

M. overhead-(1,2,3,...)= Acual hours of DL allocated to Works-(1,2,3...)\*BMO

## 11. CONCLUSIONS

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Throughout this work we already stated conclusions and proposals for improving the cost management in Rehabilitaciones SL.

The first objective is to maximize long-term sales and the second one is to minimize costs (medium and short-term). The cost adjustment is not a whim, costs are expenses with objectives, and expenses are causally related to income and as a consequence to the risk.

The questions of the manager for us to get involved in the company decisions are the followings ?

Which expenses can be reduced ? How can we reduce it ? To reduce costs we have to know it, to know their location and their behavior. To answer those questions, it's essential to know it in detail.

Rehabilitaciones with Full Cost Total, in a pack with all the costs went directly to the prices and the outcomes. From the economic standards in materials and work, they offer and accept budgets.

All this process leads to give global explanations. To deepen the details, we mustn't choose the easiest, shortest way.

To get the price, we have to approach the efficiency with the Full Cost. Before applying the economical standards, we should know the technical standards, prices and standard rates. A informatic program that give us the normal datas of the market is not enough. We have to compare and contrast it with the proper datas of the company. To allow this, It is necessary to implement the hours control of the direct labour to replace the cost of direct labor as the main basis of allocation.

The next step is to unfold the cost of each work in sequencing costs by activity. This requires a bigger effort of the project management regarding control, identification and costs localization.

As far as I am concerned, I have been lucky to arrive at the best moment in the company. With the increasing activity in the rehabilitation work, the company is doing self-criticism. The company has proposed to improve control procedures and management. I have endeavored to build a guide (a screenplay) and be helpful. The company gave me all the informations and help I needed.

Finally, through the experience inside the company, I would have liked to make simultaneously my internship and my final project in the same company.

## 12. BIBLIOGRAPHY

---

Horngren, Foster, Datar. "Cost Accounting". Ed. Prentice Hall.

Alcarria Jaime, José, y otros. "Contabilidad de Costes". Materiales de la Universidad Jaume I (UJI)

Alcarria Jaime, José. "Contabilidad de Costes". (AE/FC-3001). Materiales de la Universidad Jaume I (UJI)