Program of the Seminar of 26/02/04
Accounting of local utilities

Objectives of the Seminar

The waste collecting and disposal local utilities stayed with a "income/outcome" accounting which doesn't allow them to grasp the costs truth neither to implement a dynamic management of their activities.

The objective of the seminar is to briefly present the techniques of analytical accounting and the budgeting principles.

Preamble

Responsibility

The management sciences teach us there are some conditions for somebody be responsible.

Scope: the object of the responsibility must be perfectly defined. *A hazy responsibility cannot say which objectives must be targeted*.

Means: the responsible one must dispose the necessary means for the accomplishment of his responsibility. These means must be perfectly defined. *Nobody can feel himself responsible if he's not convinced he disposes enough means in aim to accomplish his mission*.

Freedom: the scope of the responsibility and the necessary means in aim to accomplish it must be freely negotiated. *Nobody can feel himself responsible if he doesn't agree with the objectives neither he is conscious he has not the means for targeting them*.

Control: only the results must be controlled and the control means must be defined and agreed. *To be responsible is to be free to decide how the means are to be applied. The higher authority needs to measure the results and the way to measure them must be clear and honest*.

Roles and separation of the roles

3 levels

There's 3 levels of action in the field of the solid household waste management:

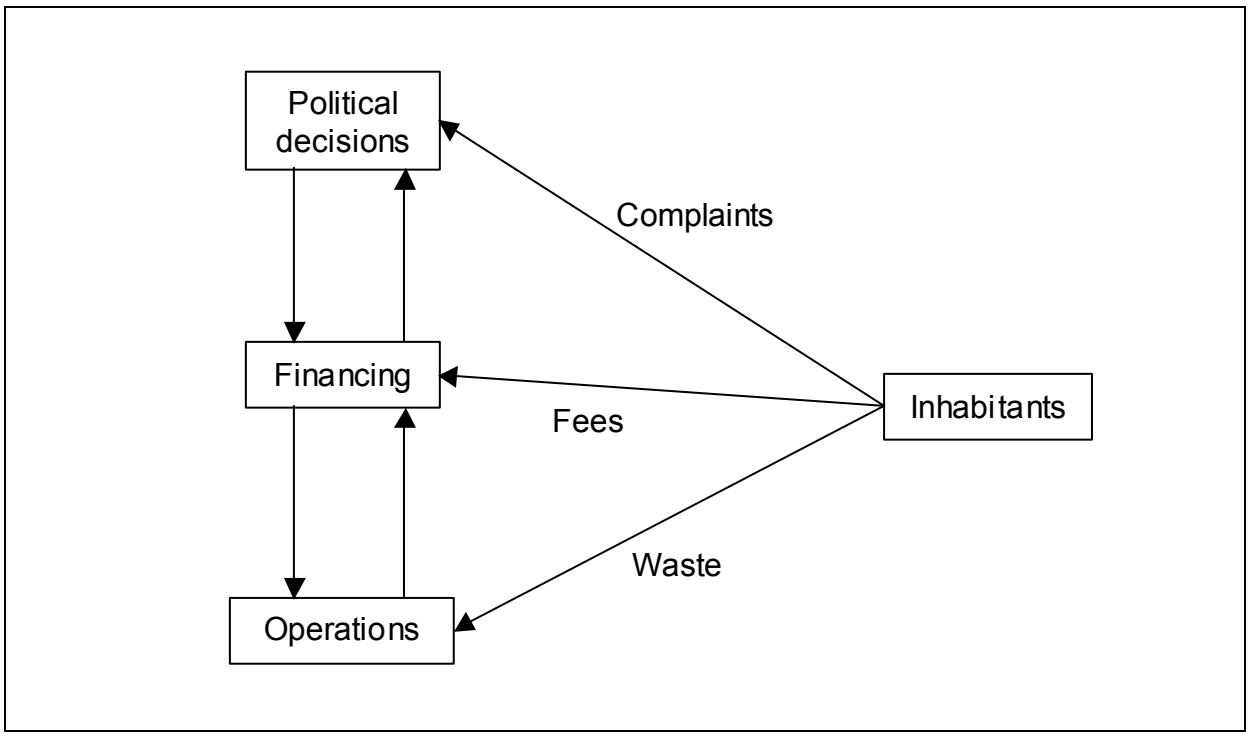
- political decisions
- financing and money management
- operations

The first difficulty is that these 3 groups of people are not focused on the same objectives.

Operations: *I collect but it costs and I need money, a truck failed, a driver is ill, there's not enough containers, …*

Financing: *who paid, who didn't pay, how much money available in the bank, …*

Politicians: *where to find subsidies, where is the State money for the low income compensation, how much it will cost next year, …*



The second difficulty is that the inhabitants interfere with each of the 3 levels.

Inhabitants: *I put my waste and they have to be collected, the disposal place must be clean, I want to pay as little as possible, the authorities are responsible, …*

Confusion of the roles

In such a situation, the sharing of the responsibilities cannot be clear and it may be asked who decides what.

European organization

Separate budget for solid household waste management (SHWM)

The first principle is that the budget of the SHWM must not be confused within the budget of the City or the District. Waste collection and disposal are considered as industrial and commercial activities of the public bodies. It is a main charge of the municipalities according to the regulation: they have to clean the city from waste. But it is a service activity which must be paid by the user. Moreover, some principles are generally applied as universality of the service (every inhabitant must be deserved), equalization (each one must pay the same price wherever he lives). But the main principle stays the costs truth. The service must be entirely paid by the users.

Social adjustments may be decided as for low income inhabitants because there's a principle of solidarity. The relevant subsidies must be clearly defined and allocated from the social budget to the SHWM budget.

Investments subsidies may be gained. They are relevant of the question of the financing of the investment which is a particular chapter of the budget.

Bottom-up and Up-bottom negotiations

The operating body has clear objectives and available means. On this base, it calculates the operating costs for the next year and asks investments for complementary means and for the replacement of out of order means.

The cashflow management has to establish and to collect the fees from the users (inhabitants, SME, craftsmen, non profit entities). It has to calculate the repartition of the needs in tariffs applicable to each category of user.

The elected people have to arbitrate between the means needed in aim to ensure the quality of the service and the tax pressure on the inhabitants. So the preparation of the budget is a round of negotiations between conflicting interests.

Sharing of responsibilities

It's clearly defined for each level:

Operating body: 100% waste collected and disposed

Cashflow management: 100% fees collected

Elected people: 100% voters satisfied

Analytical accounting

Principles

Predictability

With an income/outcome accounting, it's only possible to conclude at the end of the financial year: we received that, we expensed that, we won or we lost that. It's impossible to react in real time when events occur.

To manage is to predict. The first aim of the analytical accounting has been to predict the budget in such a way it could be respected and the targets should be hit.

Cost price

A company assumes a lot of various expenses: materials, salaries, gasoline, electricity, spare parts, taxes, maintenance, housing, equipments, … It produces all a range of goods or services, sold at a price and generating incomes. These prices are submitted to the concurrency and the usual question is to know what are the products offering a good margin and those offering a low margin. The subsidiary question is how to spread all these expenses in aim to calculate the cost price of each product.

Detailed previsions

The best way for good previsions is to detail at the maximum the previsions, on the base of facts. For example, we can take the gasoline for trucks. We know how much litres we bought last year. We know how many trucks of each model we have. We know how many kilometres each one did. We know how many litres each truck burned. We know if we'll buy new trucks and reform old ones. So, if we can estimate what will be the duty of the trucks next year, we can calculate how many litres we'll need. To resume, each one should be able to justify the figures he put in the previsions.

Decisional tool

To settle and to apply an analytical accounting is a lot of work. The more detailed it is, the more work it is. So it must not be forgotten that an analytical accounting aims only to improve the management decisions. A preliminary reflection must analyse the decision process and the information required for these decisions. So the level of details of the analytical accounting will be adjusted to the operational decisions of the management.

Investments and amortization

Value of the company

Salaries, materials, energy, and so, are immediately consumed. Premises, machines, trucks, are used over several years. These expenses are differentiated as investments. They figure in the tangible fixed assets of the company.

But at least, they will be worn out. As they figure in the tangible fixed assets of the company, and they are an element of the value of the company, this wear must be valuated and taken off from their original value.

Fiscal

The tax administration considers that investments are used for several years. So, the expense cannot be taken off as a charge the year it has been bought. This charge must be spread all along the years the equipment is used.

Finance management

At its end of life, the equipment should be replaced. So, it's necessary to consider that money equivalent to its wear must be preserved in aim to renew the equipment.

Common application

The use is to determine for each kind of equipment a duration of amortization. For example, premises will be amortized along 30 years, trucks along 8 years, cars along 5 years, computers along 3 years, and so. Usually, this duration is determined or recommended by the tax administration.

Practically, there's a register "inventory of tangible fixed assets" where are reported each equipment, the initial cost and the date of purchase, and for each year, the calculation of the amortization and the remaining value. Incomplete years are taken into account by months/12 or days/360.

If an equipment is sold, the difference between the sale price and the remaining value is calculated and is input in the accounting as increase in value (profit) or drop in value (loss).

Capital cost

Investments suppose the immobilization of a lot of capital.

Often, this capital (or a part) must be borrowed and interests must be paid.

On the other hand, if the company has enough money, it may be considered that if it put this money in investments, it could also put this money on financial market and obtain an interest.

So it's normal to consider that money has a cost and to calculate the capital cost of the investments with real interest rate (money borrowed) or theoretical interest rate (loss of earnings).

Natures of charges and products

We have said that the expenses are relevant of diverse categories. The common habit is to classify these expenses from direct to indirect expenses. The notion of direct expenses is the link with the product. The hierarchy is as:

- Raw materials and purchases for sale
- Energy, electricity, water
- Manpower (salaries and social contributions)
- General supplies
- Transportation costs
- Maintenance expenses
- General charges (phone, post, insurance, fees, rents, …)

- Taxes
- Amortizations
- Financial costs

The principle is here to detail the charges in significant items. It's no use to waste a lot of time in accounting and prevision for a category of expense representing less than 1 %o of the total expenses.

Homogenous Sections

There's usually within a company different activities: administration, sales, maintenance, transportation, workshop 1, workshop 2, workshop 3, …

For the management, it's very useful to account the charges of each one. It allows to understand how the money is expensed in the company. It allows to account how much costs the job done by each service.

These sections must be representative of the job (homogenous sections regarding their activity) but it's no use to detail too many sections. The most numerous they are, the most difficult it is to share the expenses.

Intermediary unit

The question is how to transform all that detailed expenses in cost price. The reasoning is to follow how the product is produced. Usually, the production of a product (or a service) can be accounted in hours of workers (by categories), hours of machine, kilograms of matters, and so.

The kilograms of matter, the kWh of electricity, can be easily allocated to a product. The hours of work can be allocated but what is the value of the hour of a truck driver ? So are defined working units and the cost of one working unit.

For each homogenous section must be defined a working unit.

Cost of working unit

When all expenses are shared among the homogenous sections and when the number of working units is accounted (last years) or previewed (next year), it's possible to calculate the cost of the working unit of each section.

Cost price

The cost price of a product or a service is then calculated by all the direct expenses (materials, …) and all the working units consumed for it and their cost of working units (representing the added value).

Exercise

Simulation of a waste collection enterprise

Accounting data

Means of the company

Tangible fixed assets	Qty	Unit price	Bought in	Price value	Dur Am	Amort 2003	Net value
Premises owned							
Office			1984	150000	30	5000	50000
Garage			1984	200000	25	8000	40000
Maintenance workshop			1984	100000	25	4000	20000
Trucks							
Truck A			1994	70000	8	0	0
Truck B			1996	80000	8	10000	0
Truck C			1998	90000	8	11250	45000

Truck D			2001	100000	8	12500	62500
Car			2002	150000	5	30000	90000
Equipments							
Machine-tools			1990	50000	8	0	0
Computer			2002	10000	4	2500	5000
Furniture			1986	5000	10	0	0
Containers							
	100	100	2003	10000	5	2000	8000
	100	100	2002	10000	5	2000	6000
	200	100	2001	20000	5	4000	8000
	50	100	2000	5000	5	1000	1000
	350	100	1999	35000	5	7000	0
TOTAL				1085000		99250	335500

Expenses 2003

Expenses	Qty	Annual amount	Annual amount
Salaries			
Director	1	24000	24000
Secretary	1	6000	6000
Maintenance worker	1	5000	5000
Truck drivers	4	6000	24000
Dustmen	8	5000	40000
Supplies			
Gasoline			150000
Electricity			3000
Phone			6000
Heating			5000
Water			1200
Spare parts for trucks			10000
Supplies workshop			4000
Office supplies			4000
Building repairs			5000
Others			
Taxes			15000
Social contributions			36000
Travels			12000
Receptions			12000
TOTAL			362200

Preparation of the analytical accounting

Definition of the product

The product may be defined as the collection of household waste. We'll take as unit the m^3 of collected waste.

Definition of sections

We define the following sections:

- Collection
- Maintenance
- Administration-management

Sharing of expenses

Now the exercise is to share all the expenses among the sections. For that, we will define and use repartition keys. The usual repartition keys are the pro rata of people employed, salaries, occupied m², number of machines, … The repartition key chosen for one expense must be representative of the reality.

Repartition keys				Admin	Maint	Coll
Gasoline	%			10		90
Electricity	%			40	60	
Phone	%			90	10	
Heating	%			70	30	
Water	%			33	33	33
Building repairs	%			33	22	44
Social contributions	%			30	5	65
Expenses	Qty	Unit	Annual			
Salaries						
Director	1	24000	24000	24000		
Secretary	1	6000	6000	6000		
Maintenance worker	1	5000	5000		5000	
Truck drivers	4	6000	24000			24000
Dustmen	8	5000	40000			40000
Supplies						
Gasoline			150000	15000		135000
Electricity			3000	1200	1800	
Phone			6000	5400	600	
Heating			5000	3500	1500	
Water			1200	400	400	400
Spare parts for trucks			10000		10000	
Supplies workshop			4000		4000	
Office supplies			4000	4000		
Building repairs			5000	1650	1100	2250
Others						
Taxes			15000			
Social contributions			36000	10800	1800	23400
Amortizations			99250	37500	4000	57750
Travels			12000	12000		
Receptions			12000	12000		
TOTAL direct charges			461450	133450	30200	282800

NOTA: the taxes are not shared among the section, excepted for taxes on salaries. They are charged on the rough profit of the company.

Imputation of indirect sections

It's usual to distinguish productive sections and non productive sections. The non productive sections are those not directly in contact with the product as administration, maintenance, sales. In the case of a sales section, the budget of this section is charged on the gross profit margin.

In our exercise, it's easy with only one productive section. If there's a few productive sections, the charges of the non productive sections is spread on them with repartition keys.

Cost of working unit

For productive sections, we calculate the number of working unit produced. In our case it may be the number of truck hours if we want to compare with a possibility of subcontract.

Repartition keys		Admin	Maint	Coll
	%			100
Charges		**133450**	**30200**	**282800**
Imputation				
Sect Adminitration				133450
Sect Maintenance				30200
Total				**446450**
Hours of truck				30000
Cost /hour				14,88

Unit price cost

At last, the unit price cost of the product is obtained the sum of the direct materials and the number of consumed working units in each productive section at their cost of working unit.

In our case, if it's calculated that on average a truck collects, transports and unloads 3 tons within 2 hours, the unit price cost of the service is 9,92 /ton.