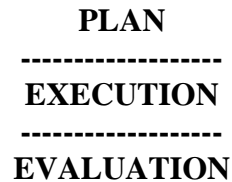


# Budgetary Control

Fayol, one of the founders of Scientific Management, created the thinking model of the management cycle or the management process, at the core:



First there is a plan. That is a must. Because anyone who does not know where he / she is going ends up elsewhere (according to an old Chinese proverb).

A **money**-translated plan is called a **budget**.

In a budget, normally standards are needed (in order to make products) for example, among other things, 20 kg of some material at \$ 11 / kg. There is of course much more written down in such a budget, but we leave it here, because this is difficult enough.

20 kg at \$ 11 / kg = \$ 220 per product times one million products, and so on; see the budget.

This is **HOW IT SHOULD BE** (ex ante, pre-calculation).

Then the execution takes place.

After which the accounting department or nowadays the I.M.I.S. (Integrated Management Information System) reports what happened in reality: \$ 220 times a million.

This is **REALISED RESULT** (ex post, reality, post-calculation).

Many a manager is happy that at last something has gone exactly according to plan and rushes to the work floor to compliment the employees. Too hasty.

Because, although the post-calculation (220) is exactly the same as the pre-calculation (220), it may have worked inefficiently.

$20 \text{ kg} \times \$ 11 / \text{kg} = 22 \text{ kg} \times \$ 10 / \text{kg} = \$ 220$

The moral of this story: the evaluation must be done thoroughly down to the smallest detail. There should not be any 'mixing difference'. This is one of the most important management tasks. In terms of theory, there is not much more to say about it, it comes down to practice. Do not believe anything, see everything first.

Copied, somewhat edited, from 'Bedrijfseconomische analyses', a textbook by Blommaert & Blommaert, the example is worked out below.

For a specific year, the costs of a production department in a company have been estimated at \$ 2,500,000 in total as follows:

Fixed (constant) costs	\$ 2,000,000	
Proportional variable costs	- 500,000	
	-----	+
	\$ 2,500,000	

The production department covers these costs through a rate per machine hour. This amount is based on an estimated production of 80,000 identical products. Normal production is 100,000 products.

Per product is required: 5 kg of raw material at \$ 8 / kg, 2 hours of labor at \$ 40 / hour and 0.5 machine hour.

The product is marketed for \$ 250 / piece (ex VAT). Unlimited deliveries can be made at the same sales price.

After the end of the respective budget period the administration reports the following data:

production	70,000 products
raw material consumption	374,400 kg at \$ 8.25 each
labor costs	140,400 hours at \$ 40 each
total production department costs	\$ 2,550,000
number of machine hours	37,400
sales	70,000 products at \$ 240 each

#### ASSIGNMENT:

Analyze, as completely as possible. And present your findings clearly.

In my opinion, this issue has **NOT** been worked out properly by Blommaert & Blommaert. For me, it has to be the following.

Fixed \$ 2,000,000 / 50,000 hours (normal) =	\$ 40	
Variable \$ 500,000 / 40,000 hours (actual budget)	- 12.50	
	-----	+
Machine hour rate	\$ 52.50	

Per product is needed:	
5 kg raw material at \$ 8 each =	\$ 40
2 hours labor at \$ 40 each =	- 80
0.5 machine hour at \$ 52.50/hour =	- 26.25
	-----
SUC	\$ 146.25

Sales price \$ 250 each (ex VAT) -/- SUC \$ 146.25 = \$ 103.75 profit margin  
Times 100,000 units is \$ 10,375,000 normal annual result

The budget for the considered year is:

sales result 80,000 x \$ 103.75 =	\$ 8,300,000	
capacity usage loss 10,000 hours at \$ 40 each	- 400,000	-/-
	-----	
how it should be NOW	\$ 7,900,000	

Addition, there are 20,000 times \$ 103,75 = \$ 2,075,000 profit loss.

Profit loss plus capacity usage loss together explain the difference between normal annual result and what is still feasible.

#### HOW IT IS:

Turnover 70,000 units at \$ 240 each =	\$ 16,800,000	
Costs:		
374,400 kg at \$ 8.25/kg =	\$ 3,088,800,-	
140,400 hours at \$ 40/hour =	- 5,616,000,-	
total costs prod. departm.=	- 2,550,000,-	
	-----	
	+	
	- 11,254,800	
	-----	-/-
realised annual result	\$ 5,545,200	

To be explained: \$ 7,900,000 compared to \$ 5,545,200 is \$ 2,354,800 -/-

10,000 products less than expected x 103.75 = **1,037,500 -/- profit loss**  
i.e. 5,000 machine hours x 40 / machine hour = **200,000 -/- capacity usage loss**

70,000 units x 5 kg each =	350,000	kg expected
	374,400	kg really
	-----	
	24,400	kg more x 8/kg = 195,200 -/-

70,000 units x 2 hours each =	140,000	hours expected
	140,400	hours really
	-----	
	400	hours more x 40/hour = 16,000 -/-

70,000 units x 0.50 hours each =	35,000	machine hours expected
	37,400	machine hours really
	-----	
	2,400	more x 12.50/hour = 30,000 -/-

#### Total 241,200 -/- efficiency loss

Blommaert & Blommaert calculate the efficiency difference machine hours at the complete machine-hour rate.

Inefficient use of the machines, 1 hour longer than necessary, what does that cost?

I think \$ 12.50; the rest is here fixed. In the analysis by Blommaert & Blommaert, inefficient work partly solves the capacity usage loss. But by working quite inefficient, then Blommaert & Blommaert solve all capacity usage loss! Suppose only 11 products are made and that they

do it day and night all year round, Blommaert & Blommaert even make capacity usage gains according to the calculation method in their mentioned book.

There is no price difference in working hours, but yes at retail prices and also on raw material. There is also a difference in price on the costs of the production department.

The price per kg of raw material is 0.25 setback and this we have 374,400 times, so  $374,400 \times 0.25 = 93,600$  -/- price loss raw material.

The sales price is 10/item setback  $\times 70,000 = 700,000$  -/- profit loss sales price.

Expected costs of production department:

fixed costs	2,000,000	
$37,400 \times 12.50 =$	467,500	
	-----	+
	2,467,500	relative to 2,550,000 really

The difference is 82,500 -/- price loss machine costs. Blommaert & Blommaert talk about a possible efficiency difference here, but there is no further information whatsoever about it and it has in every case nothing to do with the above efficiency difference with respect to the machine hours where Blommaert & Blommaert go completely wrong. Blommaert & Blommaert make a "mixture" of efficiency difference and capacity usage difference – concerning the machine-hours. It is against the logic, settling fixed costs through differences other than the capacity usage difference.

**Total 876,100 -/- price loss**

Subtotals in bold are together, total 2,354,800 -/- QED

In a comment on my above criticism, prof. dr. A.M.M. Blommaert points out the following:

"By making more machine hours, in the production department it accounts

1. A better capacity usage result, converted at the constant costs per machine hour;
2. A higher budget and thus a better budget result to count against the variable rate per machine hour;
3. A worse efficiency result to count towards the integral tariff per machine hour.

The overall picture of the functioning of the production department cannot therefore be influenced by manipulation of machine-hours (Blommaert & Blommaert, 1997, p. 196)."

..... 'So' .....

Blommaert & Blommaert's analysis is as follows:

turnover difference	\$	1,737,500
efficiency difference	-	337,200
price difference	-	93,600
budget difference	-	82,500
capacity usage difference	-	104,000
		-----
	\$	2,354,800

In summary, my analysis (see specifications above) reads:

profit loss	\$	1,037,500
capacity usage difference	-	200,000
efficiency difference	-	241,200
price difference	-	876,100
		-----
	\$	2,354,800

Side note on the analysis by Blommaert & Blommaert:

Turnover difference \$ 1,737,500.

This amount can be further specified: \$ 1,037,500 loss of profit and \$ 700,000 price loss on sale price.

There is an expected turnover of 80,000 pieces times \$ 250 / piece is \$ 20,000,000.

The realized turnover amounts to \$ 16,800,000. About "turnover difference", which is \$ 3,200,000 what has to be analyzed in the price loss at \$ 700,000 and there is \$ 2,500,000 revenue lost by 10,000 products fewer sold.

Efficiency differences and capacity usage differences are indeed \$ 441,200 together, but Blommaert & Blommaert do not analyze both differences thoroughly and even explain this "mixture" so-called well by noting: "The total picture of the functioning of the production department cannot be influenced by manipulations ... etc. (Blommaert & Blommaert, 1997, p. 196)."

Two different managers could be responsible, one for the capacity usage difference and the other for the efficiency difference.

Variance analysis is about to see exactly what inside some department has happened in detail. As long as two effects together to be considered, no full analysis differences has been made, cause of many dangers.

The price difference of \$ 93,600 mentioned by Blommaert & Blommaert is only the price difference on raw materials. There are undeniably more price differences.

The budget difference of \$ 82,500, mentioned by Blommaert & Blommaert, is specifically the above-mentioned price difference for machine costs.

Capacity usage difference concerns, in any case, the fixed costs, and in case of non-proportionally variable costs also the extra costs or the extra differences which arise from the realized capacity usage with respect to the actual budget or the standard normal budget. And the reverse is equally true. That is logical! The capacity usage difference is literally the difference which has happened by a different realized production.