
Sizing the Companies

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Within the context where the dimensional flexibility, the size of the performed activities and the use of resources – capacities of production, of labour force, of the capital etc. - shows the fitting degree of the company at the environmental changes, respectively the ability to obtain a performance, the issue of the size of the organization is the fundamental and essential answer that a modern manager has to look for and find it. The size of the company influences the production costs, the profit, the market quota and its social influence upon the stakeholders, context in which its calculation is important for the small companies (*especially when the enterpriser wants to develop from the statute of “one man show”, at the implementing of a complex organizational structure*), as well as for plants and industrial factories or even corporations and holdings with national and international activity.

The experience showed that, in a company's size issue, a structure that is too big can be as harmful as a small one. Although the general presumption is that the economies of scale grow together with the increase, it is assigned the reconsideration of this hypothesis and being aware of shortcomings connected by the communication obstacles, the lack of handling, the innovation stifling, the impersonality and the loss of motivation, these being as many negative effects as they obligatory associate with, in a bigger or smaller extent, the spreading beyond certain limits. A modern manager who wants to be successful in the present native business environment must have in view this strategically direction that contradicts the motto “big is beautiful”, but without unconscious falling into the other extreme and to promote the economy's atomizing until a degree beyond which the companies cannot

present a minimum influence in the competitive fight with the transnational concerns, than in the context of some coalitions/agreements that, mostly, they are forced or subordinated to some hidden onerous interests.

The applying through copying some solutions taken from developed economies as USA – *where the motto “small is the best” implies a contribution at GDP of over 50% from the part of those 14 million small companies in the services, bakeries, tapestries, hairdressers etc.* – must have in view that the wording is proper in the American economy development stage, that fell into the post-industrial phase, of services, for which the most adequate are the small companies, while in the countries that never reached this level, it is necessary to co-exist and to develop both types of companies.

Moreover, a modern managerial concept must promote flexible structures like those of constellation or system type, where the company is not seen as an isolated unit, but it occupies a position, central or marginal in these structures, in an organization type strongly adaptable to the environment.

Given these reasons, the optimal size determination of the company implies **the balance point analysis** between the expenses and incomes (*the break even*) and **the cost minimization type** of the manufactured product, to find out the minimal acceptable dimensions, respectively **the control zone** and **the number of hierarchical levels**, for its superior defining.

The balance point analysis between the expenses and incomes compares the receipts **V** with the costs **C**, identifying the minimum production volume so that the process to be profitable, whereas:

$$V = x * p \quad (1.1.)$$

where x = products volume and

p = obtained unit price

$$C = C_{fixed} + x * C_{variable} \quad (1.2.)$$

where C_{fixed} = fixed costs,

$C_{variable}$ = variable unit costs

Plotting the two linear variations, having on abscissa x , the number of products/year, and on the ordinate, the incomes V , respectively the costs C , it can be found the rentability level, as well as the profit/loss value, according to the phisycal production, corresponding the figure 1.

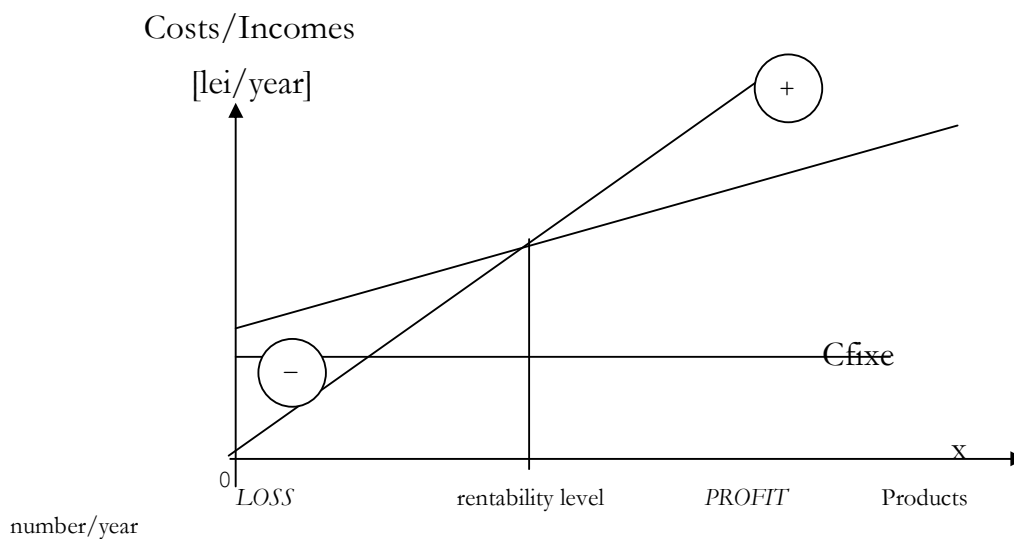


Fig. 1. „The balance point analysis”

At the same time, through the identification of the obtained profit, after the formula:

$$\frac{(V - C)}{K} * 100 \quad (1.3.)$$

where K = the invested capital

a comparative analysis of the capital recovery rate can be made confronted by the obtained profit from its placing in other bank operations or others.

The company's optimal size determination after the **minimum cost** criteria implies the costs optimization, as a premises of the profit maximization.

Given the specific production cost

$$C_1 = \frac{C_{fixed}}{x} + v \quad (1.4.)$$

where v = variable costs on product unit

and the cost with transport

$$C_2 = D * T \quad (1.5.)$$

where $D = \frac{2}{3} R$ = medium distance (in Km) between the manufacturer and beneficiaries,

and R is the radius of action of the company

T = price on km

Taking into consideration

$$x = S * \Gamma \quad (1.6.)$$

where $S = \pi * R^2$ = the geographical zone served by the company

Γ = the specific product demand on unit of surface

Results

$$C_2 = \frac{2}{3} * T * \sqrt{\frac{x}{\pi * \Gamma}} \quad (1.7.)$$

Means

$$C_2 = z * \sqrt{x}$$

where $z = \text{constant that depends on } T \text{ and } \Gamma$

Total specific cost is, as it results from figure 2 as well, like

$$C = C_1 + C_2 = a + \frac{b}{x} + z * \sqrt{x} \quad (1.8.)$$

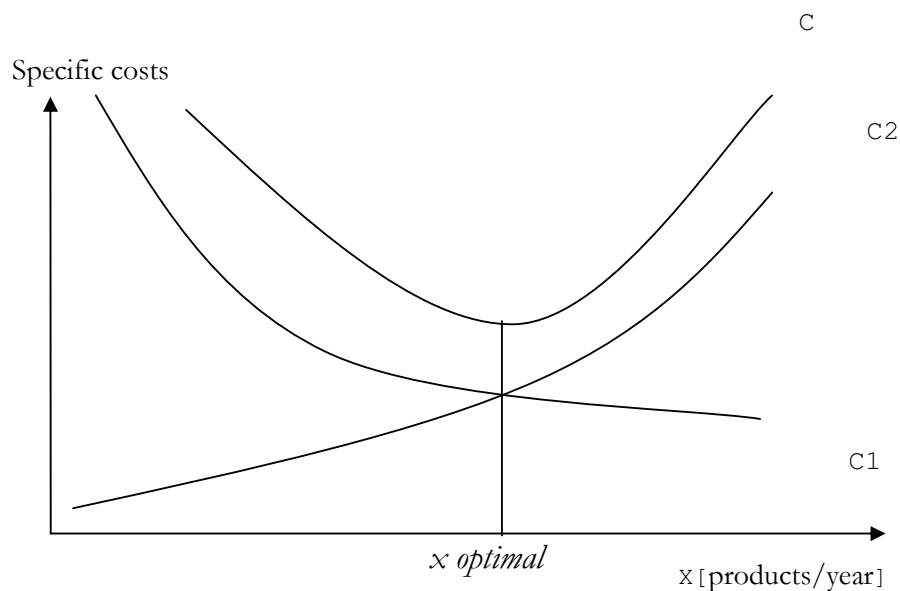


Fig. 2. „The company’s optimization after the minimum cost criteria”

Cancelling the coefficient of 1 order of the function C compared with x size shows that the minimum point of the graphic, respectively the minimum costs, that meet at the value x optimal of the company's dimension, with

$$x_{optimal} = \sqrt[3]{\frac{9 * \pi * \Gamma * b^2}{T^2}} \quad (1.9.)$$

On the other hand, the superior limitation of an industrial company dimension is given by the determination of the fundamental parameters according to the **control zone** (*the number of subordinates of a manager*) and the **number of hierarchical levels** that show the manager's distance from the place where the basic operations are performed, influencing the reply time of the system.

The general tendency is of hierarchical pyramid flattening, for a better flexibility of the company and thus to decrease the wage costs with the managers, but this determines the increasing of the subordinates number at a leader, affecting the act of decision.

In the conditions when the relationships between a manager and his subordinates increase following the formula:

$$R = (2^{a-1} + a - 1) \quad (1.10.)$$

where a = subordinates number

And knowing the fact that the man cannot control more than 100 phenomena one at the time, according to their complexity, a control zone of about 4 – 6 subordinates results at the top of the pyramid (*where the decisions are more elaborated and produce bigger effects*), this rising through the base of the pyramid, reaching 15 – 20 workers at a master if the activity is performed after procedures, technologies, etc.

According to the company's specific and the environment dynamics in which it works, the maximum number of hierarchical levels n , which

can assure the reply to change and the clients' feedback can be estimated.

Therefore, the maximum number of employees N can be found, after the formula:

$$N = \frac{(x-1)^n}{x-1} \quad (1.11.)$$

where the medium zone control $x = \frac{\text{number.of.employees.N}}{\text{number.of.leaders.C}}$

Using these estimations, a modern manager can assure the flexibility condition of the company, which, in the present stage of globalization, can constitute a competitive advantage superior to the one determined by the low costs of production, in view of the higher pretensions of the clients and giving up at the products standardizing in favour of their particularisation on consumer groups, thus the advantages of scale lose their importance.

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