Concepts of Necessary Costs to Be Used in the Minimum Enterprise Decisions

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Abstract

For the correct substantiation of many managerial decisions, the costs provided by the calculations are not sufficient. Because of its complexity, managerial decision may require consideration of costs other than accounting. Under these circumstances, the management of the mining enterprise is subject to the requirement of an economic (net different from the accounting, based on the result of calculations) approach of the decisional situation, which implies the ability to identify and quantify the costs of opportunity, implicit costs, relevant costs, influenced, the costs "sunk".

Keywords: *decision, cost, management*

Introduction

The decision-making component holds a privileged position in the architecture, functionality and performance of the management system of any enterprise. No other organizational element has such a pronounced managerial specificity and so much impact on all their business plans and business results.

As a result, most management authors view the decision as the essential element of the management process and the specific tool for expressing managers. In essence, the qualitative level of the way an enterprise is run is best expressed through the results achieved by the decisions made and implemented. The decision is the "resistance piece" of management, its most dynamic expression, through which it expresses its functions in full.

Perhaps no other economic category has such high connotations and influences on the decision-making process as the costs. In their various forms of expression, structured in relation to some or other of the criteria, costs are most often the essential element underlying management decisions.

The explanation of this importance, we consider, is as simple as possible: the cost reflects the best, quantitatively, but especially qualitative, the processes that take place within the enterprise. In order to achieve its economic objectives (maximizing profit, maximizing value) and fulfilling its social responsibilities (assuring consumers of goods and/or services), the enterprise consumes resources, the costs being one of the fundamental elements expressing the efficiency of their consumption.

The cost of opportunity

In its most general definition, the cost of opportunity is "the value of the opportunity or opportunity lost or sacrificed due to the action taken or the option made" [5]. According to this vision, the entrepreneur who uses his own capital to finance certain businesses, in fact, eludes him from other uses, thus incurring the cost of the opportunity (chance) lost to using that capital to fund other projects. Faced with this perspective, the cost of opportunity is the most significant economic criterion against which the economic efficiency of different capital investment alternatives must be assessed.

Relating the importance of opportunity cost to decision-making can be achieved by considering a simple example. A mining construction company has a stock of 50 tons of steel purchased at the price of 100 m/ton. The current market price for such steel is 120 m/ton. The company's decision on the price at which it accepts a paper in which it consumes the entire steel stock cannot disregard the current steel price, 120 um/ton, because the sale of steel (to the detriment of its use in carrying out a work) an alternative, an option that cannot be neglected in any decisional analysis. If the business does not achieve at least a price equal to the current market price for the steel, it means that it has made the wrong choice because accepting the project means sacrificing the opportunity to sell steel. This example makes it possible to note the weak link between the historical cost and the final decision to be taken. Basically, this cost is neglected in decision-making.

The cost of opportunity is the cost behind price formation on the free market. For example, the price of steel used to manufacture a mechanized abatement complex is determined by its value in other alternative uses. A mining company will therefore have to pay for the steel it consumes a price equal to the one paid by the companies using steel for other uses (car, ship, agricultural machinery, etc.). If the mining company does not do so, if it does not pay the price for the withdrawal of steel from alternative uses, it will practically not produce mining equipment, the steel being used exclusively for the construction of cars, ships, agricultural machinery, and so on

Economic resources are of value to the extent they can be used to produce goods and/or services for consumption. When an enterprise purchases a resource for a particular use, it has to pay a sufficient price for it to withdraw it from other alternative uses (the applicant for the project has to pay for steel from the stock of the construction company a sufficiently high price to withdraw it from the sale on the market). Basically, the price of a resource is determined by its value in the best alternative use.

The sizing of state grants should be based on the cost of opportunity. For the mining industry in Romania, such assessments were not used in such decisions.

Implicit costs

Normally, the cost of using resources for productive purposes implies one or more payments, called explicit costs, and other non-payment costs, called default costs. Payments of materials, wages, utilities, interest, dividends are all examples of explicit costs. However, the implicit costs associated with a decision-making situation are more difficult to identify and estimate. These costs do not involve cash payments, and as a result, they are often neglected in decisional analyzes. Examples of default costs are numerous, the most common ones being:

- which a cash holder would charge if he made a bank deposit with money, and would not keep them "sock";
- the rent that the owner of an uninhabited building would pay if he hired it;
- the income that the owner of a farmed land will receive if he rents it.

To clarify the difference between the two types of costs, explicit and implicit, can be considered as the following example. Two entrepreneurs, A and B, are analyzing the business of buying a small mining enterprise that exploits an ornamental rock deposit in its quarry. To take over the business it would require 800. The entrepreneur A has the capital needed to buy the career, unlike the entrepreneur B, who has only 500 u of his own capital but can contract from a bank in the form of a loan with a rate annual nominal interest rate of 30%, difference of 300 um Assuming that the results and operation of the small mining enterprise will be the same, regardless of the entrepreneur who will take over the business, the question is: entrepreneur B, who pays an annual interest of 90 um , does it have higher career costs than entrepreneur A? From the point of view of explicit costs, the answer to the question is affirmative, because entrepreneur B has annual payments higher by 90 um than entrepreneur A. For decision-making purposes, management, the answer to the question is negative. The two entrepreneurs cannot have different annual total costs, even if they have different explicit costs. Entrepreneur B has more explicit costs because of the borrowing interest he pays. The total (implicit and explicit) costs of the two entrepreneurs are the same. Entrepreneur A carries a default cost of capital opportunity equal to the amount that he could have earned in an alternative use of the capital invested for taking over the career. At the limit, if in another business it would have obtained a 30% return on the invested capital, it means that it carries an implicit annual cost of opportunity equal to 240 um In turn, entrepreneur B also bears a default cost of opportunity due to capital own investment, in an annual amount of 150 um, which amounts to the 90-um paid annual interest, leads to the same annual cost, 240 um, equal to that of the entrepreneur A.

In the first alternative was taken into account the implicit cost of the capital opportunity, but the implicit management costs were not taken into account. In order to introduce them into the analysis, we will assume that entrepreneurs will also ensure the management of the small mining enterprise. Entrepreneur A is an engineer and could earn as an employee 90 m/y, while entrepreneur B is a clerk and could earn as an employee 40 m/y. Under these circumstances, the total annual operating costs of the quarry are no longer equal for the two entrepreneurs. Entrepreneur A will incur a default cost of 50μm/year (90–40) than entrepreneur B.

From the entire example presented, one can see how the decisional situation is affected by the implicit costs.

At this point of the paper we should emphasize a particular qualitative aspect of the calculations, taken from the work "Calculation and cost management". When addressing the issue of cost-based costing, a distinct type of cost is so-called "computer interest", expressed in particular by "entrepreneur's salary" and "interest on equity". The two kinds of costs are, in essence, implicit costs, of the opportunity, by taking them into account, the cost calculation increasing in difficulty, but closer to the requirements imposed by rigorous and complete substantiation of managerial decisions.

Relevant costs

"Not all costs are the basis for decision-making, but only relevant ones" [3]. Almost every decisional situation involves identifying and determining the amount of certain costs. The costs that the manager should consider when analyzing decisional alternatives are called the relevant costs.

Even though the definition of the relevant costs is relatively simple (the costs to be decided), their identification is not so easy. Every decisional situation has its own specificity, the relevant costs in a given situation becoming irrelevant in another. For example, in determining the cost of completing income tax determination, accountants are required to use the actual amounts spent on materials, labor, utilities and services provided by third parties. Also, the legal framework determines the methods for calculating fixed assets' depreciation and provisioning. In conclusion, for the purposes of taxing profit, the relevant costs are past expense. These costs are also relevant for other official, legal purposes. For managerial decisions, however, these past costs, already incurred, may not be relevant, as they are not appropriate, as management costs are generally more relevant to the current costs or future projected costs.

A suggestive example comes in support of the previous statement. A mining enterprise has in its heritage a scrap combination that has been used to exploit coal reserves in several slaughter fields, being completely depreciated from the accounting point of view. However, a technical analysis of the state of the combine shows that it could still be used to extract the coal from another slaughter field. If, however, the combine would be scrapped, different components could be recovered in a total value of 80 um

In these circumstances, can the zero cost of using the combine to extract the coal from the new abatement field be considered as zero? The answer to this question is affirmative only if we analyze the situation from a strictly accounting point of view (combining being fully amortized, the cost of using it further is zero). From an economic point of view, the future use cost of the combine is not equal to zero, but represents 80 um, the value of the components that could be recovered today but which will no longer have any value when the reserve in the new field is exhausted Peaks. It means that for the decision to use the combination to continue or to dismantle it, the past accounting cost has no relevance, the cost of future use of the combine being equal to 80 um

Another example is to outline the concept of relevant cost more clearly, but at the same time proposes to move to another category of costs of particular importance for managerial decisions in the mining sector. A mining enterprise, in the idea of starting a new project, purchased a forwarding combine, paying for it the sum of 1,000. The project was not started, and the combine of advancing remained unused for four years. Attempts to sell it have failed, and the analysis of the mining machinery market shows that there are no prospects for finding a buyer in the future either. However, the opening of coal reserves to a new horizon is a possibility to use the combine. In this situation, the following question arises: what is the relevant cost of using the combine? Perhaps an accountant will calculate the amortization for the duration of the combine and will assume that it is the cost of using it. An experienced manager will, however, consider that the use of the combine harvester generates a relevant zero cost because if the opportunity does not appear, it will still be unused. Combine is an integral part of the mining enterprise's patrimony.

It has been bought in the past but has economic value only to the extent that it will be used in the future. The amount paid when buying the combine is a past cost, definitely borne, irrelevant to the decision to use or not to combine without other alternatives.

With all their simplicity, the two previous examples can serve as a basis for assessing the importance of cost-related aspects of decision-making. The issue of cost relevance becomes complex when coupled with cost calculations in order to substantiate complex decisions such as continuing or stopping the exploitation of reserves in certain mining perimeters, ie the transition to another phase development of the operating unit.

Influenced costs

The relevant cost concept leads to another cost-critical concept for decision-making. It's the cost that's influenced. Impaired costs are costs that vary with a particular decision. Hence, the conclusion that, in any decision, the relevant costs are also influenced costs (costs affected by the decision).

Influenced costs should not be confused with marginal costs. The marginal cost is just a particular case of influenced cost, with the multitude of influenced costs not being reduced to marginal costs. The marginal cost is a cost influenced by the change in activity level, while the generally influenced cost is a cost influenced by any change, including the level of activity. For example, we can talk about the cost influenced by the introduction of a new product in the manufacturing, the cost influenced by the adopted transport system, the cost influenced by the abatement technology applied, the cost influenced by the decision to close a zone and the extraction of the reserve another geological block, etc.

With all the simplicity of the concept, in many decisional analyzes, influenced costs are not properly quantified or even neglected. The following example confirms this observation. An enterprise refuses a special order representing the production of a particular mark (for which there is excess capacity) and selling it at the 2-um price because an accounting calculation indicates a full unit cost of 2.2 um (obtained by adding to the cost marginally of 1.6 μm of a common cost share of 0.6 μm). Referring to the influenced cost concept, two fundamental questions can be answered: "What costs are incurred if the order is accepted?" Respectively "What costs are incurred if the order is declined?" Accepting the order involves only marginal costing of 1.6 μm (decision-relevant cost, decision-priced cost) because the shared cost share (0.6 μm) is anyway supported, whether or not the order is accepted. Accepting the order means earning a unit contribution margin of 0.4 um (2–1.6), while rejecting the order means losing this contribution to cover fixed costs and generating the result of the period. In conclusion, an addition of uninfluenced costs (allocated on the basis of certain rules or allocation coefficients) to the costs influenced by the decision may entail erroneous decisions resulting in the rejection of certain profitable opportunities, as the undertaking concerned did.

Situations such as those presented in the example are common in companies experiencing a temporary reduction in demand, a reduction that generates excess capacity. These undertakings often accept contracts at a sufficient price only to cover direct costs, but not fully cover the corresponding share of common costs. In this way, the enterprise cannot function "infinitely". As a result, such alternatives, concretized in accepting pricing orders above the estimated cost level but below the full cost, should only be considered as short-term solutions, and in the long run it is necessary to identify and exploit opportunities that provide at least normal profits, because only in this way can the enterprise aspire to development and strengthen the competitive position.

For a developing business, a decision can generate new costs, suppress some old costs and keep them unchanged (obviously an old cost that remains unchanged after the decision, intervenes as a constant, without affecting the outcome of the decision). Similar influences may also be known for profits, which in turn should be treated as costs of opportunity. In such a decision, the final effect is a result of all the influences mentioned, being determined by the relationship

[result of the decision] = [new generated costs] -
[old cost suppressed] + [old profits lost] - [new profits earned]

A positive value of the result obtained on the basis of the previous relationship indicates a wrong decision, while a negative value indicates a correct decision.

Costs "SUNK"

Consideration and acceptance of the influenced cost concept inherently implies the principle that any cost that is not affected by the decision is irrelevant for the purpose of that decision. Irrelevant costs in relation to decisional alternatives are called "sunk" costs because they "play no role in determining the optimal course of action" [5]. These costs have been generated by past decisions and cannot be influenced at present, regardless of the adopted decision alternatives. As a result, they "are not relevant to future events, and can be ignored in making the decision" [3].

At least until 1990, according to our knowledge, the Romanian economy did not have the problem of identifying and analyzing such costs, so that the lack of a consecrated equivalent language term reflecting the concept is justified. Subsequently, at least two reference works in the field of costs pre-

sented and illustrated the concept, under the name of "hidden cost" [3], ie "cost indifferent or submerged"[8].

The importance of these costs in decision-making is significant, but even in the US economy, where the concept originates; there is a relatively high frequency of their incorrect treatment.

The mining branch, through its specific activities, offers many examples of "sunk" costs. In the patrimony of the mining enterprises, the special share is represented by the special constructions, represented mainly by the mining works and the various fittings and installations related thereto. From a decision-making point of view, all of these assets are past, definitively borne costs, "sunk" costs, irrelevant to many current and future decisions regarding the future exploitation of reserves.

This economic feature of capital participation in mining is essential to properly assessing the assets of mining companies in investment start-ups, start-ups or curtailments, as well as in reinvestment to maintain their business or to invest further to develop capacity production.

Conclusions

Cost-oriented control and decision-making has become one of the core components of the company's profitable management mechanism. It has even come to the design of a system of rules (cost-based) that allows the company to compete on the market in performance conditions, a system designated by the concept of "controlling". The cost calculation, as a process by which identification, assessment, grouping, division and aggregation of expenditure items and structures is achieved in order to obtain the cost of the resource used, the place of activity, the activity or the process as a whole, respectively of the product or period, the clear distinction between two notions which, very often, are attributed the same meaning: costs and costs. The full definition of "expenditure" can only be achieved in an integrating process, with four main coordinates: the generator element, the place of production, the carrier, and the reference period. Instead, the main features that ensure the individualization of the notion of "cost" are: resource consumption, link to achievements, monetary expression. The distinction between costs and costs, reported on the basis of the ratio between financial accounting and management accounting, can be quan- tified in four different ways: in terms of belonging to one of the two branches of accounting, in terms of differences in nature, in terms of evaluation in monetary terms, from the point of view of the reference period. All these nuances allow for a hierarchy of the relationship between costs and costs, materialized in the areas of costing: by cost types, by cost carriers, by cost places.

In the particular case of the mining company, several questions can be asked about the elements of the definition of the concept of cost, namely:

- what resources do you work with?
- how resources buy from the market?
- how do they get these resources?
- all expenses generate the purchase of resources?
- can consume to get goods?
- the costs are "born" with the consumption of resources?
- is the term "resource consumption" appropriate to define the costs of the mining company?

Answers to such questions are likely to illustrate a number of peculiarities of mining activities that cannot be ignored in the calculation process.

Once the cost is defined, the result can also be defined in relation to it. Cost-to-detail cost analyzes look at places of activity (costs) and cost carriers. Places of work, also referred to as management centers, are essentially cost-generating places and results, which in the organizational structure are identified with a department that is entrusted with responsibilities related to a function, activity, work, project, goal, etc., and for which the associated expenditure-income relationship can be determined. The planning and control tool of management centers is the revenue and expenditure budget. Particularities of cost locations in mining enterprises are related to their diversity and different destinations of achievements. Thus, a place of costs may be: an opening work (corporeal immobilization), a preparation work ("stock" intended for internal consumption in future exercises), a montage or repair work (for the current exercise or for several future exercises), a cut-off (the actual extraction site of the useful mineral), a process (transport, water evacuation, aeration). Cost carriers are the final products (limited to the object of activity, in limited numbers, coal types, ore concentrates, and useful rocks), ie work and services destined for internal consumption.

Due to the complexity of the need to ensure a correct substantiation, the management decision may require consideration of costs other than accounting (calculation products). A new approach has been developed in which the concepts of opportunity cost, implicit cost, relevant cost, influenced cost, cost "sunk" prevail.

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Koncepcje niezbędnych kosztów, które należy zastosować w minimalnych decyzjach przedsiębiorstwa

Dla prawidłowego uzasadnienia wielu decyzji zarządczych koszty przedstawione w obliczeniach nie są wystarczające. Ze względu na złożoność decyzje kierownictwa mogą wymagać uwzględnienia kosztów innych niż koszty księgowe. W tych okolicznościach kierownictwo przedsiębiorstwa górniczego podlega wymogom ekonomicznym (innego niż rachunkowość netto, opartego na wynikach obliczeń), podejścia decyzyjnego do sytuacji, co oznacza możliwość zidentyfikowania i oszacowania kosztów alternatywnych , kosztów ukrytych, kosztów utraconych możliwości, kosztów ukrytych.

Słowa kluczowe: *decyzja, koszt, zarządzanie*