

Cost-Based Decision in Public Sector

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Abstract: Management decision must be based on relevant costs (costs that allow for the best measures for business management), recognized by their forecasting characteristics which records hidden or opportunity costs, social costs and outsourced costs. Correctly predicted a profit is to build costs for possible revenue. The cost is a sacrifice, resource consumption. Because decisions aimed at future activities, the management calls in this respect, detailed information on future costs, some of which are not included in accounting data collection system. The power of decision maker on costs is therefore limited.

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1 Introduction

For management control, the cost relevance is judged by the following manner: a cost is relevant if it is applicable to a certain decision, in that it is related to any option of the manager. Relevant costs are those costs that support the management in decision-making (the right cost for the right decision). And so the question arises: what costs are relevant to decision making? And the answer is very simple: any cost that can be avoided it is relevant for decision-making considerations. An avoidable cost can be defined as a cost that can be eliminated (in whole or in part) by choosing one variant or another in the decision process. Any cost, which is present in one of the variants decision and is absent in whole or in part, in another alternative, is known as an avoidable cost. All costs are avoidable (and therefore relevant) except for costs already occurred and future costs, which differs from past costs.

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Costs already occurred can not be avoided, whatever the action chosen by the manager. Since these costs are no relevant to future events, they must be removed from the decision making process. Basically, the decision based on costs involves the following steps:

1. Collecting all costs associated with each alternative decision;
2. Elimination of costs already occurred;
3. Elimination of costs (information) which do not differ between alternatives;
4. Making a decision based on information (costs) remaining.

Remaining information cost include relevant costs or costs that “make the difference” between the different possible options. Therefore, these costs are called *differential costs*.

Beyond the qualitative characteristics of information cost and the need for a balance between them, it should be noted that the use of certain information or to others in decision making will depend largely on the nature of the environment in which the organization works.

Into need to differentiate costs, depending on the decision-making requirements (a decision involves choosing between two or more types of action) we will consider several categories of decisions based on costs encountered in the public sector.

2 The “Make or Buy” Decision. Outsourced Costs

Strategic decision “to make or to buy” some products or services is responsible to evaluate and establish realistic, exactly, that alternative is more beneficial for the final economic results of the organization.

The criteria for review are not only economic and must take into account certain technical reasons, organizational and even social. These criteria representing the main arguments supporting the “make or buy” decision are presented in the table below:

Table 1. Arguments for the “make or buy” decision

TO MAKE	TO BUY
✓ Reduced production costs	✓ Reduced purchasing costs
✓ Unsuitable suppliers	✓ Existence of multiple suppliers
✓ Not ensure adequate supply (quantity and time)	✓ Lack of technical and managerial skills to produce
✓ Use surplus staff and increases profit	✓ There is no adequate capacity
	✓ It provides flexibility and

TO MAKE	TO BUY
✓ Performing the desired quality	alternative supply sources
✓ Eliminating fluctuations in suppliers deliveries	✓ Fast and expensive technological changes
✓ Protecting employees and maintaining specialists	✓ Ensure reciprocity in products or services
✓ Maintaining or increasing the number of enterprises	✓ Eliminates management activities, just negotiation

The mentioned arguments represent a checklist, after which periodically check that the adopted policy is maintained, justified by the benefits obtained: new capacities, organizational development, changing cost structures, modification of the quantity of products or services requested by customers can be grounds for reconsideration the initial decision.

Below is an example of “make or buy” decision in the City Hospital Targu Bujor in Galati, namely *the decision to make or to buy medical laboratory analysis*.

I. Economic arguments

TO MAKE	TO BUY
<p>Employees required: 1 clinical laboratory doctor, 1 biologist, 2 medical nurses, 1 medical registrar, 1 attendant nurse.</p> <p>The costs structure: - Direct costs: staff expenditure (191.438 lei) and expenditure with medicines and sanitary materials, substances and reagents (78.504 lei); - Indirect costs and general administration (19.275 lei); - Annual accreditation costs (9.650 lei); - Initial specific costs (mandatory): implementation and accreditation SR EN ISO 9001 (3.750 lei), implementation SR EN ISO 15189</p>	<ul style="list-style-type: none"> ✓ The average tariff per analysis: 7 lei ✓ Many suppliers, ability to negotiate tariff. ✓ Elimination of costs required for specific accreditation. ✓ Reduce administration general expenses. ✓ Fast and expensive technological changes: latest laboratory equipment and not older than 10 years (10 years old equipment does not evaluate to contracting with the County Health Social Insurance House, and based on seniority, 5-10 years old - contracting score decreases).

TO MAKE	TO BUY
(39.740 lei), RENAR accreditation (5.300 lei).	
Quantitative indicators:	
- Number of analysis for outpatients (17.827);	
- Number of analysis for hospitalized.patients (23.744);	
Average cost per analysis:	
- 8.36 lei in first year;	
- 7.19 lei after accreditation.	
Favorable option: TO BUY	

II. Organizational arguments

TO MAKE	TO BUY
<ul style="list-style-type: none"> ✓ The existence of accredited laboratory able to meet one of the criteria required for hospital classification in category IV, which is an advantage to hospital financing. ✓ Ability to make additional own income from medical request services. ✓ The organizational structure is not modified by order of Minister. 	<ul style="list-style-type: none"> ✓ Elimination of organizational and managerial activities. ✓ Elimination of logistics necessary for specific accreditation. ✓ Eliminating the need to participate in proficiency testing schemes for medical analysis laboratories.
Favorable option: TO MAKE	

III. Social arguments

TO MAKE	TO BUY
<ul style="list-style-type: none"> ✓ It is the only medical analysis laboratory at a range of 60 km. ✓ Very high addressability of patients. 	There are no social arguments.

- ✓Laboratory has integrated medical system that allows patients to obtain information, schedules and on-line results, without the need for more visits.
- ✓The Unique National Fund of Health Social Insurance, ie employee and employer contributions, remain in the public system to be used by public hospitals. Most laboratories accredited and that have contract with the County Health Social Insurance House are private.

Favorable option: TO MAKE

The approach of decision must be made clearly by completion of three categories of decisional arguments: economic, organizational and social. In the economic arguments are used to analyze the relevant costs (differential). It eliminates from decision-making, costs that have occurred anyway, such as general, which have been allocated. In contrast, variable costs (direct materials, direct labor) are relevant because they would not occur if the hospital would not provide laboratory analysis. The same would happen to the cost of laboratory accreditation, which could be avoided. Consequently, since the total of avoidable costs (relevant or differential) exceeds the price proposed by the supplier, the decision is to buy and offer may be accepted.

Instead, in terms of organizational and social, it is obvious that **the final decision will be to make.**

The consequence of manager decision to buy rather than produce is outsourced costs. Outsourcing of certain costs is an organizational tendency frequently encountered in public institutions. Remodeling organizational subsystem based on the value chain, is also based on giving up through outsourcing at certain costs.

Outsourcing is therefore an organizational trend, complementary to the remodeling organizational subsystem based on the value chain: creation of an organizational subsystem based on value chain necessarily involves giving up those activities which do not fall in the value chain and can be performed efficiently by other companies.

Each organization comprises a set of activities of different natures and sizes, whose interactions result its performance (Nicolescu & Verboncu, 2008, pp. 282-283).

Economic and managerial practice in recent years shows the public institutions tend to select those activities that generate superior economic results. In other words, there is a tendency for remodeling of organizational subsystem according to value chain.

Introduced by the famous American expert Michael Porter (Porter, 1990), value chain designate a set of activities-value, strategically relevant for the organization, by whose combined strengths, the organization creates competitive advantage compared to its competitors.

Remodeling organizational subsystem, according to the value chain is a highly complex process, involving a thorough review, both from managers and organizational specialists consulted.

In terms of Porter's model, value chain analysis goes through the following main stages:

1. Decomposition of the process in specific value-generating activities: originality of decomposition model of value-generating activities is to combine the two ways of grouping them: primary activities, which contribute directly to the product and its utility to the buyer, and support activities, which contributes indirectly, but are found dissipated in the first category or contribute to their coordination (Lock, 2001, pp.142-143).
2. Allocation the costs or assets: to the activities previously identified are associated costs of product realization, through an adequate system to track costs, different from that commonly used in accounting. Expression of activity costs takes the form of percentage of product price, taking into account the profit rate. For the identified activities can be associated assets (capital elements, possibly equipments), evaluating their share compared to the total used for that product.
3. Identification of critical activities, namely those based on competitive advantages. The stage involves comparison with major competitors to reveal those activities that are strengths.
4. Identifying 'valuable' collaborators, carried downstream and upstream, respectively an assessment of their contribution to achieving value, through estimation of the collaborators' costs based on the purchase price, respectively selling price.
5. Identification of value-generating links between different categories of activities, including those with collaborators downstream or upstream. Referral to the synergies that exist or may arise, involves the creation of a reference system, which can have as basic elements the previous situation of the organization, the situation of competitors or those best placed, ie an average of interest sector.

6. Optimization of the links between different activities that require their classification after alleged impact on the generation of competitive advantages.

Returning to the example of hospital laboratory, we analyze the value chain by Porter:

- *Specific value-generating activities*: primary activities (labor and direct materials) and support activities (RENAR accreditation of the laboratory and maintaining the standard SR EN ISO 9001);
- *Attributable costs between value-activities*: primary activities - 83% and support activities - 27%. By eliminating the support activities, tariff per analysis would be 6.96 lei, therefore under offer of any private supplier;
- *Competitive advantages*: strategic location - at least 60 km of the following medical laboratory; RENAR accreditation - the only public accredited laboratory in Galati;
- *'Valuable' collaborators*: outside hospital specialists involved in laboratory proficiency testing schemes and internal and external quality control laboratory (quality control analysis between local laboratories and external checks with international laboratories - Finland);
- *Value-generating links*: the existence of an accredited laboratory allows the hospital getting IV classification based on competence. Since July 2011, funding of public hospitals depends on the category of classification granted by the Ministry of Health assessment. Thus, for a lower category, hospital in our example would get 8% less financing: category IV has 15% less financing than category I; category V 23% less than category I).

It is noted that in the value chain analysis, although financially, the decision would be **to buy** surplus value is actually brought by the decision **to make**.

Outsourcing refers therefore to renunciation by an organization to carry out certain processes of work, less important and which does not fall on vector of value of the organization, activities that can be performed by others in terms of price / quality same or better, decreasing the complexity of management and operational activities to focus on key-activities, crucial to its performance.

3 Decision In Conditions of Limited Resources. Opportunity Cost

Economic theory states that a decision is based on opportunity cost. This is defined as the value of next best alternative, or, in other words, net earnings lost by not accepting the best alternative available (Stefanović, 2010, p. 25).

The concept of relevant costs, choosing between alternatives requires consideration of expected future costs that differ in alternative actions (Budugan & Georgescu, 2006, p.13). Relevant in decision-making process, the opportunity cost means the sacrificed benefit, when choosing an alternative in favor of another, namely *missed choice cost or chance cost*. Making a decision involves choosing a solution over another.

Opportunity cost is therefore the sacrifice suffered by an economic subject when choosing between several possible solutions, cost of election or cost of giving up. There is here, in conceptual terms, an incompatibility because in accounting are recorded only what is, not what could be. It is not an explicit cost recognized in the accounting, but an implicit or economic cost, behind reality, but that counts in making a decision: when a businessman chooses an activity, its economic cost can be considered as net income would have been obtained if he had not made that decision, that is the benefit lost, appreciate economist Ronald H. Coase, Nobel prize laureate for economics in 1991. (Bouquin, 1997, p.76)

Opportunity cost is analyzed rather as a waste of probable resources than as a cost in fact. In economic terms it can be interpreted as a “loss of earnings” resulting from the fact that decider has not made the best decision, or as a “reliable information price”, resulting from the fact that the decision-maker, if he had known certain consequences of its decision, would have taken the best decision.

Managers trying ever more to integrate opportunity costs in economic analysis of management problems; (Budugan, 1998, p.116) it comes especially to social opportunity costs, such as the appearance of a conflict or degradation of social environment, as sources of losses.

Opportunity cost is used only for limited resources, because in these conditions, the sacrifice may arise in favor of other more efficient alternatives. In case of unlimited resources, the idea of slaughtering costs for other plans of action can not be considered and the opportunity cost is zero.

The public sector has always faced the problem of limited resources. Whether hospitals, local governments or public universities, the need to provide more quality services to taxpayers with less is becoming increasingly burdensome. The act of choice, especially in the public sector appears as a necessity of limiting resources. Thus, production is subordinate decision process on resource allocation - allocation and best use of resources to better meet several needs. The decision

process consists of a sequence of stages, through which decisions are taken according to the criteria considered.

Resources are limited, rare, especially in the public sector, which makes their use to enter into competition: when we satisfy a need in a greater extent than another, then you have to accept a less satisfy as the other needs. A resource-needs ratio, always higher than one, is a perfectly valid status in the public domain: for example, government expenditures on education enter into compete with the financial resources allocated to health or social protection, or in a public institution, prevails staff expenditure against investment or stocks. And all this because the development of the first of them can be done solely by reduce the last of them, given the amount of resources.

Limitation of resources obliges the public manager, to be effective by restoring priorities. In most cases most of the results is due to a small but very important set of resources. Appealing to the Pareto principle under which, theoretically, we need only 20% of resources to achieve the desired results, at least in the public sector, the remaining 80% is lost due to inefficiency. It is therefore very important that the public manager, under the limitation of resources, to distinguish between **efficiency** (“doing the right things”) and **effectiveness** (“doing things right”). He must identify those decision strategies that prove effective use of funds under limited resources. In this sense, cost-benefit analysis provides a set of techniques that are designed to ensure that resources are allocated efficiently.

No matter how restricted is an action of a public institution, it exerts an influence on resource allocation, because it involves itself inevitably consumption of resources and thus, as long as resources are limited, an opportunity cost. **The opportunity** is therefore the best alternative to be waived when using limited resources to produce or procure an economic good.

The decision and the opportunity cost derive from rarity of resources, which forces us to discernment and rational economic behavior. Resources are limited, the choice of certain goods and services means, thus, giving up to others, because the use of resources in a certain way eliminates the possibility of their use in any other way. Every choice has a cost, so managers must choose reasonable, considering the advantages and disadvantages, benefits and costs.

A choice is rational if from it is obtained greater benefits than costs involved. It is economic rationality, the one which requires that limited means to be used so that maximum satisfaction is achieved. Rationality principle can be formulated either as maximum, where obtained the best results possible with limited resources, or as a minimum, where the desired results are obtained with the lowest consumption of resources.

A limited resource can be defined as being a resource (material, time, equipment, money) that can be obtained in insufficient quantities in relation to need, and for

which the existing opportunities exceed the total number of resources available. Due to the large number of opportunities, the one who will take the decision will have to choose the optimal alternative, which involves predicting the benefits or contributions coming from possible alternatives.

In general, the decision-maker has the following options:

1. Incremental cost of using limited resources exceeds the money paid to acquire resources, or:
2. Limited resources can be used for other purposes, with other profits.

The optimal resource selection will be based on opportunity cost, which is actually the contribution that can be achieved by using limited resources for other purposes.

Because the opportunity cost is considered to be relevant, we ask if in cases limited resources, the two costs interact. In fact, the relevant cost consists of two elements: the contribution lost by using the best alternative, but also the variable cost of limited resources.

We look for an example of a public hospital decision under limited resources: *day hospitalization - an alternative to continuous hospitalization*. An economic analysis of these two types of hospital services will require a choice. Resources are limited; we can not produce all medical services, even if some may have great therapeutic effects. Therefore, choices must be made between alternatives, based on criteria. A comparative analysis of costs and consequences of various alternative services will help the hospital manager to take the best decision in the context of resource limitation.

The main difference between the two types of hospitalization is the fact that day hospitalization required internment up to 12 hours.

Continuous hospitalization is a form of internment, granting preventive, curative, recovery and palliative healthcare throughout duration necessary to complete resolution of the case.

Day hospitalization is an alternative to continuous hospitalization for patients who require medical attention more than 12 hours. This is done in surgical structures in which anesthesia and surgery is practiced under conditions that allow the patient to return home the same day. This involves the surgical maneuvers during the maximum 12 hours, after the patient is discharged. It addresses to patients requiring surgery of short duration (60-90 min) in various specialties, with lower bleeding and respiratory risk and predictable evolution, simple, painless or less painful, without unexpected sequelae or disability. Patients may have aged from 6 months up to elderly, with a pathology that is suitable for this type of intervention, biological and hemodynamic balanced, which fall within certain social criteria (to understand and accept the intervention and pre and post-operative

recommendations, who benefit from domestic environmental conditions acceptable, to have access to a telephone or mobile, with an attendant in the period immediately postoperative and in the next 1-3 days, if applicable).

Economic evaluation in this case aims to find the lowest cost alternative, the results being the same: patients healed. **The advantages** of day hospitalization are numerous, both as economic - *reducing hospital costs* and the social aspect - *the patient's confidence in the medical system*:

- Decreasing the period of hospitalization reduces direct medical costs;
- Elimination of the recovery period reduces indirect costs;
- Hotel costs (accommodation, utilities and food) are almost eliminated and general indirect costs of administration are minimized;
- Uses techniques, equipment and instruments last generation, the latest achievements of modern medicine;
- The patient has a very low period of intervention and recovery;
- Reduces patient suffering and postoperative sequelae;
- Reduces patient stress induced by hospitalization, the rupture of the social and environmental;
- Conducting to recovery among family and family support.

An example of a diagnosis that lends itself better to the day hospitalization is "Second trimester spontaneous abortion". Costs of treating patients with this diagnosis are:

Continuous hospitalization:

- average duration of hospitalization: 3 days;
- tariff per day of hospitalization in obstetrics department: 203.57 lei;
- average cost per episode of hospitalization: 610.71 lei;
- net revenue (CAS settlement): 735.03 lei;
- net benefit: 124.32 lei.

Day hospitalization:

- maxim duration of hospitalization: 12 ore;
- tariff per medical service: 194,00 lei;
- net revenue (CAS settlement): 194,00 lei;
- net benefit: 0 lei.

Most public entities are not mainly intended to obtain profit - as patrimonial result, but rather achievement the objectives with given resources. Therefore, the public manager will choose day hospitalization, while the private manager will choose the most likely continuous hospitalization - which brings financial benefits.

The next best alternative is, in this case, continuous hospitalization and opportunity cost, defined as net revenue lost by not accepting the best alternative available is the amount of benefit lost, sacrificed (124.32 lei). Manager's decision to fit into limited public funds, forced him to choose a solution (day hospitalization) at the expense of another (continuous hospitalization). Should not be to understand that the best is not necessarily the lowest cost, but the one that occurs at the appropriate time and place and providing the precision required by the user.

The example presented is within the national strategy of rationalization of hospitals by reducing the number of acute beds. This limitation requires managers to create new models of healthcare, that switching to less expensive services: the alternative of day hospitalization.

4 Conclusions

Unfortunately, in the public sector in Romania, strategic cost management is not based on value chain analysis, strategic positioning analysis or sources of cost, able to assist in selecting activities to be taken further and respectively the activities in which to quit. Only interested in immediate and simplistic cost reductions, the Romanian government seems to prefer low-sophisticated approaches: reducing staff, cutting salaries and pensions etc.

Thus, in too many cases, the government has no knowledge or simply ignores equally effective alternative, but being more mature in terms of management, still preserves the chances of success of public sector organizations. It takes cost management based on a strategic plan for a minimum of three years, to pursue the increasing public sector and not "resisting" or "survival" until restoring the situation (Briciu, 2009).

Cost management includes those processes needed to ensure progress and completion of a project of the public entity within the approved budget: resource planning, cost estimating, budgeting, and finally, cost control. Completion of these steps will enable the manager to take the appropriate decisions at some point, which if delayed them, will incur much higher costs. Management ability to influence costs is crucial in public entity activity.

A decision may not be taken unless we consider the costs involved, because the main objective of the entity is to obtain performance, an objective that can not be made only in accordance with decisions correlated with costs. Before taking any significant decision using data based on costs, managers must identify which costs are truly relevant to these decisions.

But at present we live in a world of limited resources which requires a rigorous analysis of social context, economic, cultural and historical of the entity that

implements a particular method of costing. Making use of inexhaustible resources, ie creativity and intelligence, we must decide objectively the opportunity of a particular management accounting system (Talpeș, 2010).

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