CRITICAL ANALYSIS OF COMPUTER SYSTEM USED IN IRON AND STEEL INDUSTRY IN LIBYA

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Abstract:
Phased calculation method applied by industrial enterprises with mass production as in the case of companies in the iron and steel industry, characterized by a simple technological process, conducted in successive stages of processing raw materials and materials from which finished product is resulted. Despite the advantages offered, the phases method has several disadvantages indisputable that require improvement of cost calculation in the iron and steel industry enterprises. This paper aims at presenting the inconvenience that the phase method involves and providing solutions for improvement.

Key words: *phases method, iron and steel industry, Libya, calculation, cost*

JEL classification: M 40, M 41

1. INTRODUCTION

After oil industry, iron and steel industry is one of the most important industries in Libya, it represents 5% of GDP and contributing to a large part of the country's exports. Development of this industry is essential for Libyan economy as it contributes to reducing the dependence on oil exploitation and export that faces the country today.

Determination of the cost of production is of particular importance because of the functions it performs this economic indicator in the iron and steel industry enterprises to optimize decisions. We believe that determining the production cost efficiently and continuous exercise of management control functions on responsibility centers by measuring the activity results in those centers, are basic requirements for proper management in order to achieve economic efficiency. In a market economy the company is subject to risks and this makes accounting information to be indispensable to the management act. In this context, knowledge of accounting must not only be possessed by people working in the accounting department, but also by those responsible for managing the enterprise heritage.

Any company, regardless of its size, must constantly prove their operating power, the ability to adapt and to compete even if it is hard, even if economic and social environment is changing. Or, this requires the recognition at all levels of the role of accounting in its complexity, namely financial accounting (general) and management accounting (managerial).

In the costs approach, the modern trends of questioning regarding the volume and dynamics. These are subordinate to the decision acts to minimize costs and saving resources. Highlighting several cost categories demonstrates the timeliness of economic calculation for most areas of activity. In this regard, it is more frequently used and calculated the cost of information, the cost of time, the cost of quality. In the specialized literature, the cost is approached and treated not only as an expression of the consumption of inputs, but also as a sacrificed chance. Thus we have a cost of renouncing the production or choosing something else, a concept called opportunity cost.

2. THE SPECIFICITY OF IRON AND STEEL INDUSTRY AND ITS INFLUENCE ON COST CALCULATION

The technological process has implications for the organization of management accounting and cost calculation in any company. The flow diagram underlying the prosecution consumption as they occur and are important in monitoring costs. One of the major factors that condition the level and quality of manufacturing process and sales plan is the company structure. An important issue is the determination, namely judicious sizing of technical - productive and auxiliary areas because this conditions the normal course of the production processes. In the large steel enterprises takes place the entire technological process, from raw materials as minerals, as they are extracted from nature, until the finished products. For small enterprises, the raw material to obtain steel is the waste coming from various sources such as scrap metal. In this way, unlike small businesses, large enterprises use only partially scraps as raw material.

The basic process in obtaining ferrous alloys is to reduce iron oxides ore using coke and carbon oxide at high temperature in a special oven called a furnace. Following the reactions occurring in the furnace it results the following items: molten cast iron (also called pig iron), molten slag and blast furnace gas. Pig iron is the main product of the furnace and is further used in steel mills to obtain steel. From processing aggregates, steel is poured into special molds called metal forms from which, after solidification, the ingots are obtained. The ingots are then sent to polling mills of the steel plant where they are processed by hot deformation in rolled products.

Iron and steel industry enterprises have mass production and are characterized by a simple technological process, conducted in successive stages of processing raw materials and materials, resulting in the finished product.

3. ADVANTAGES AND DISADVANTAGES USING THE METHOD OF PHASES

Phased calculation method is used by companies in the iron and steel industry as well as in industries such as glass, ceramics, sugar, synthetic fibers etc.. The object of calculation is represented by the product and the phases fallowed by it in the manufacturing process. The production costs are recorded in monthly accounts on each manufacturing stage and at the end of the reporting period, by cumulating all the costs to obtain the actual unit cost of the finished product.

A. Baciu and T. Duţia (1981, p 84) define the manufacturing stage as the division of the technological process, bounded from organizational point of view, which performs a specific task in the chain of successive operations of raw material processing, to obtain one or more end products of mass or large series. The production cost calculation stage is technical and economic term of manufacturing phase, characterized by a specific of the training or the calculation, analysis and cost control, as assessed D. Budugan (2007, p 267).

The method of calculation per manufacturing phases is based on the principle of locating the production costs and establishing the responsibility and the contribution of each place of activity to achieve production program (S. Briciu, 2006, p 142). Besides the undeniable advantages, the phases calculation method has a number of drawbacks which in our opinion require rethinking of the cost calculation system in iron and steel industry companies in Libya.

The method of calculation per manufacturing phases is characterized by the fact that the production costs are followed on each phase or stage of production through which the product passes and only then is calculated the unit cost per product. A specific aspect of calculation per manufacturing phases is that the calculation phases are established by splitting the technological process in its key points. A problem that arises

from the initiation approach for applying the phase calculation method is the delimitation, sometimes conventional, of the calculation phases based on technological flow. If the phases are set incorrectly, automatically the informational valences of the method application decrease.

It should keep in mind that the information is useful for taking a decision but must also consider the cost of obtaining information. The phased calculation method has the disadvantage that generates unjustified increase in the volume of documents to be processed and stored thus increasing the volume of accounting and calculation works. Another disadvantage of this method is the occurrence of some difficulties regarding the determination of production in progress, on phases etc. In the design of this method, the calculation phases are treated as centers of responsibility both in terms of production and costs. For successful implementation of the method it is necessary to have the possibility to devise the expenses on phases and at the end of each phase it should be measured and expressed quantitatively the output.

From the analysis carried in the Libyan iron and steel industry, it was found that the sub-activity cost is not recorded nor followed, despite the fact that some sectors are not performing at full capacity. In this case the cost of stored products is influenced (increased) by the sub-activity expenses. Another problem is the fact that actual production costs are unjustified increased with unproductive expenses. Not affecting the production costs by these expenses would ease the analysis of the causes that have generated them and the measures taken to remedy them.

Consequently, in Libyan companies from iron and steel industry is imperative to improve and diversify the methods of management accounting and cost calculation by introducing new methods and ways in order to raise on a higher quality level the information costs, such as the T.H.M method, standard cost method, some elements of the direct-costing method, ABC etc.

The current cost calculation method practiced in the Libyan iron and steel industry (phases method), allows the determination of an historical cost, used for settlement and justification post factual of the production costs. We consider that using this method can not provide the leadership with fully information needs. Another drawback of the method in question is that does not allow the operative determination of the infringement in actual costs from those predetermined (budgeted), in order to operatively interfere to correct abnormalities that cause disturbances in the process of production. Thus, managers are deprived of the possibility of intervening during the development of production processes in order to correct anomalies.

To summarize, we believe that the main advantages and disadvantages of the calculation method on manufacturing phases are presented in Figure 1.

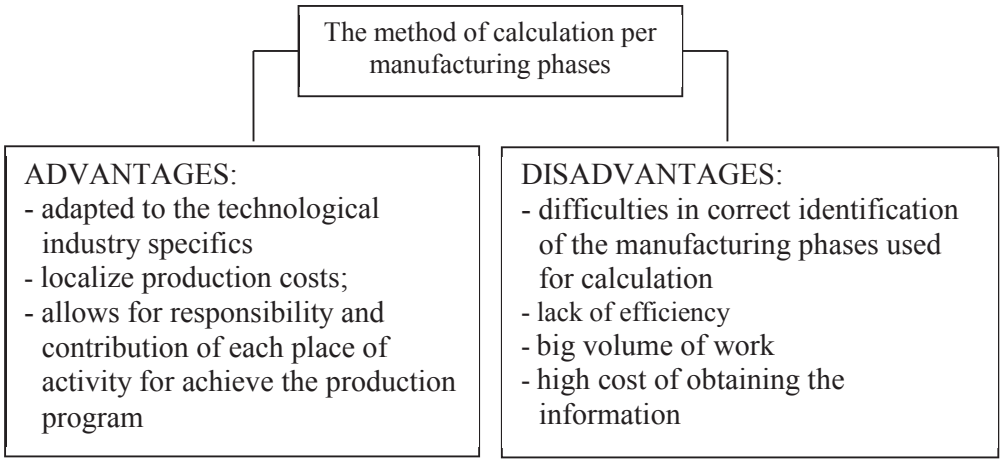

Figure 1. The main advantages and disadvantages of using the phases' calculation method in the manufacturing iron and steel industry. Source: prepared by the author

We consider that it is necessary to make a critical analyses of the current situation from which should be kept the positive elements, followed by promoting new methods that provide useful information for company management decision making.

We appreciate that for reorganization of cost calculation should be taken into account the following objectives of the company:

- the introduction of technological improvements in the production process;
- the scientific organization of the production processes;
- full use of energy in production;
- raising the skills level of employees;
- the continuous improvement of products quality of the company;
- wherever possible reduce in the administrative costs.

4. CONCLUSIONS

From the brief analysis of the cost calculation method used nowadays in the Libyan iron and steel industry (phases method), it can be argued that the main drawback of its application is the lack of efficiency and the reduced possibilities it offers for prediction. This causes the information concerning the process of production not to reach the management team in time for them to adopt the most appropriate decision. On the other hand we consider that this method does not provide managers with future view of carrying out production process and the management accounting fails to fulfill its role as accounting in the service of the management process.

In our opinion, improving the costing method currently used is necessary as a consequence of the fact that under current conditions, the problems to be solved the economic activity management are increasingly numerous and complex. In this context, the efficiency of production depends, among other things, by the efficiency with which information about its deployment reaches the company managers, by the skill which the leadership leverages the information in the decisional process and in conducting the operational control of the production process, with the prospects of achieving the goals set.

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