

Preliminary Analysis of Operating Costs and Economic Effects in Experimental Model Phase

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Abstract

This article aims to emphasize the importance of the preliminary analysis and the economic effects within managerial decisions and the cost of operation so that the account information to be used efficiently. The inventory accounting contributes to the planning, budgeting and managing of the enterprise economic resources. To manage the resources and the costs means not only to try to reduce their value but also to maintain the balance between the expenditure and the utility generated by this. That means to take good decisions in all domains which have influences over the enterprise's resources and costs. The result of the enterprise express its own exploiting elements – the owned resources – the capability of the enterprise to produce by its own activity – namely what is capable to produce – and all the quality dimensions of its own production capacity – how it produces and for whom. Keeping the potential of the enterprise's activity depends on the way it succeed in recovering, by selling, the costs resulted from the manufacturing activity and the development is conditioned by the difference between the amounts obtained from selling the goods, execution of works or services and the expenditures related to these activities.

Keywords: *managing accounting, costs, managerial decisions, costs calculation, financial analysis*

JEL Classification: M400, M410, M210, M10

Introduction

The preliminary costs analysis needs a study to be performed previously, starting from the general context and targeting the results, for the purpose of products' efficiency and offering implementable solutions for Romanian electro technical area.

Although we talk about the economical effects, the preliminary analysis is required due to the fact every commercial agent aims to a high productivity referring to the Romanian industry and services levels and implicitly to a significant economical growth which can lead to a better standard of living.

The costs of operation are the most significant within the total expenses, these were built according to the application of the project over the production capacity of Bucharest Institute of Research for Electrotechnics (ICPE).

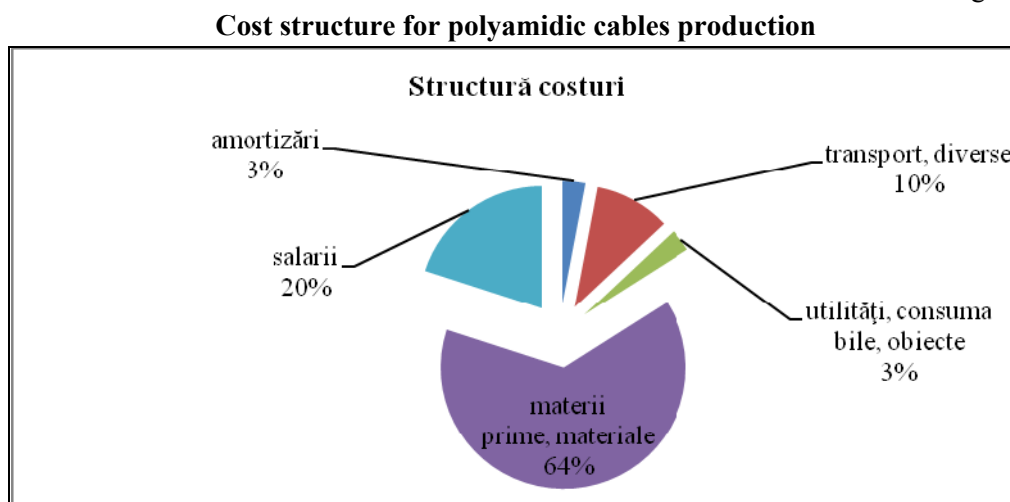
The expenses correspond to present estimations and do not include positive evolutions which could appear within production process, generally included in the "learning curve", whereof the followings could be considered as the most important:

- balance reduction for some raw materials with high values and their replacement by cheaper ones but with the same technical value.
- diversification of product's applicability with influences on raising the added value and on reducing the share of fixed expenses within the unit price.
- obtaining significant commercial discounts from suppliers according to order's volume increase and ordering frequency stabilization.
- obtaining favorable conditions of cashing from clients related to increasing attention shown for the offered products, applications' diversity and arising the number of end users.

The effects of the "learning curve" won't be included in the analysis as the unit costs for production are kept constant.

Within financial analysis there are taken into consideration the goods which are representative for current production and in addition the improved product "**cables for medium voltage made of polyamidic material processed by irradiation**"

Figure 1.



Within the material's expense structure the raw materials have the most important share. This situation comes from the production type which commands the usage of materials with special properties which can assure reliability and security for manufacturing process.

Once the production is extended the development of new assets for investing in improving the production process will be taken into consideration, respectively about EUR 350.000-500.000. By this investment the cost structure could be modified as following:

- increasing the value of amortization;
- reducing some wage costs;
- reducing the consumption of raw material.

The proposed delivery prices raises to about 750 EUR/km. On the market the prices are floating for the same type of cable, from 700 to about 1500 EUR/Km depending on quantity and the number of orders.

It can be concluded that for special orders or small lots ICPE offer is superior. At the advantages gained from costs could be added: the availability and the on demand orders, aspects which could not be achieved by western goods resale companies.

In case of a raising in production capacity, the prices could be 8-10% lower, bringing a major challenging advantage on internal market.

1. General aspects regarding the market and commercialization

1.1. The approach of market research

We estimate that there can be followed the fifth elements within Porter Analysis within the actual context of the internal and international economic situation:

- threatening regarding the emergence of new competitors;
- direct competitors;
- threatening from substitute products/services;
- negotiation power of clients(buyers);
- negotiation power of suppliers.

For a complete and correct market analysis, important factors within both company and market must be implied in order to identify and analyze the favorable and unfavorable elements.

The market analysis required by commercialization of halogen free electrical cables represents a complex activity, as approaching method, resources and period of time. For composites used as materials for insulation, the market analysis requires a double approach namely: the direct consumers market, respectively the cable production itself, and the intermediate industrial consumers market, respectively the producers of applications for public transportation.

Regarding the industrial production customers, the technical-financial offer must be preceded by the demonstration of performances and their lasting without alteration over the all period of product's life designed for direct consumption. In addition the superiority over some alternative products used for the time being, even the metallic components or other traditional plastic materials will have to be demonstrated leading to the apparition of a new class of applicators.

By these actions a portfolio with potential customers can be generated, and a production capability can be dimensioned. Within present study all necessary information for performing a proper market research can not be identified.

That's why, the market research will start from general estimations of the economical sector evolution within the activity will be performed and the status of the potential customers. The information sources are the followings: historical data collected at ICPE as a result of the activity both commercial and production, statistical data provided by National Institute of Statistic, companies presentations, publications, articles published in virtual space (INTERNET).

1.2. Characterization of the industrial sector, the applicator belongs to

The industrial applicator ICPE carries on the main activity within electro technical branch of industry, but the present application is based on a technology particular to chemical industry, respectively the rubber and plastics industry. By realization of composites it is aiming to diversify the offer for increasing the company economical efficiency and performance of new products' customers.

However, application will be analyzed as a technology inside the chemical branch due to the fact the novelty comes rather from material domain than the industrial process of electrical cables production. In addition the potential alternative solutions could raise from chemical domain.

Being an important sector, the chemical industry followed the industrial general tendencies, having an accentuated decrease within 1997-1999. After 1999 the chemical sector recorded a sudden change with an accentuated trend for the following years, when industrial production increases with 8% annually were recorded.

It can be estimated that in the following years the economical growth will be significant, a medium growing rhythm of 5% being a certitude.

The decreasing tendencies of level the chemical industry shares in the total industry, accentuated enough for the last decade of the past century tends to significantly diminish, being possible a recovery to the level of 2.5% from the past.

Production is favored by the base of raw materials produced in Romania assuring lower acquisition prices, especially in the case of purchasing smaller quantities. For importing materials for the moment there are no alternative solutions. However the prices are relatively reasonable.

Within the presented context it can be concluded that the sudden change of the chemical industry favors investments designated to production diversification, inclusively for export, based on high value-added products.

1.3. The target segments of economy

The target segments of the product refers to the situation of the direct sales of the electric cables on specific markets and also to the market of particular and high operational safety goods consumers.

Positive trends of the macromolecular material production, favors the growing interest towards basic chemical products intended to applications. With the continuous trend of growth, diversification (new product offering) is a prerequisite to maintaining a favorable rate.

Although the internal market has an important value, sectors considered does not have the role of locomotive for the whole industry sector. However, amid industry recovery rate is expected an increase in the production of industrial products.

Regarding the internal market potential, we can say that it remains high despite the decline in total industry share target sectors. It should be noted that by offering new materials available and accessible locally, it will stimulate the production of industrial goods and the emergence of new business opportunities, which could lead to an increasing demand.

1.4. Degree of innovation of the sector

At national level, the degree of innovation in the industry can be considered to be satisfactory, about 83% of companies having concerns in this regard.

In the period 2000-2013, only 13.7% of businesses can be considered as both product and technology innovative, 2.4%, technology product only, 1.8% process only and 0.1% representing ongoing projects.

From the point of view of the renewal of pi the product portfolio and technologies, basic chemistry industry occupies nationally second position (after construction). Although it provides only about 10% of industrial production, by the number of companies that have introduced products and/or technologies the chemistry stands for 15-20%.

Renewal products and technologies determines additional chance on making exports. Innovative attitude is recorded rather under medium-sized enterprises, which tend to occupy an increasing position within export growth and production stabilization.

Despite the high degree of innovation in the sector compared to other national sectors, it is estimated that the possibility of applying this technology, as it is presented in the present project, by another manufacturer is minimal in the absence of the source of cheap raw materials and utilities.

1.5. Elements sizing of the products and specialist services

The production will benefit from the results obtained in the project CD can be classified according to NACE classifier used by the National Statistics Institute in Sector 2.23 - "The production of wires, cables and optical isolated." The sector is fully privatized. Of the 41 enterprises registered with production of wires, cables and optical isolated as main activity, only 5 are great, the rest being SMEs.

In the year 2013 the number of enterprises and economic performance elements are shown in Table 1.

Table 1.

Elements of economic performance / 2013

Indicators - Year 2013	TOTAL
Number of enterprises	518
Capital to 31.12.2013 - mild. USD	0,321
Average number of personnel	4127
Turnover - mild.USD	1,461
Direct exports - mild.USD	0,061

At national level the capital is concentrated in large industrial enterprises with over 50 employees (over 75%). Diversified demand and the need for flexibility in production and delivery systems have resulted in a number of small businesses.

Overall it can be said that, although without a significant increase in labor productivity, small and medium enterprises sector are designed to respond rather market demand customers, characterized by sharp competition, pronounced segmentation and diversification.

Sector can be considered to have high productivity in the total domestic industry by participating at a rate of 0.31% to the turnover, with only 0.18% of total staff employed in the industry. The data are shown in Table 2.

Table 2.

Share of "production of wires and cables and optical isolated"

Indicators - Year 2013	%
Number of enterprises	0,09%
Capital to 31.12..2013	0,22%
Average number of personnel	0,19%
Turnover	0,39%

Five main domestic producers, the turnover of the "production of wires and cables and optical isolated " registered in the year 2013 are:

1. S.C. PIRELLI ROMÂNIA CABLURI ȘI SISTEME SA
2. S.C. ICME ECAB SA
3. S.C. IPROEB SA
4. S.C. ROMCAB SA
5. S.C. ELECTROPLAST SA

The top 5 significant manufacturers within sector provides over 84% of the turnover and the top 20 producers provide over 99%. By the staff, the top five companies hold 71% of the employees and the top 20 have over 98%, which compared with other undertakings, indicating a higher productivity value in large enterprises.

Table 3 presents data regarding the concentration of the sector.

Table 3.

Concentration of undertakings' production of wires, cables and optical isolated, "2013"

Number of significant manufacturers	49
Cumulative% of total employees	
- first 5	72,50
- first 20	99,01
Cumulative% of turnover	
- first 5	85,47
- first 20	99,79

Overall it can be seen that although the concentration and economic capacities are concentrated in the large and very large enterprises, there is an increasing trend to transfer many manufacturing activities to more than flexible SMEs, which by specialization, may cover more effectively the demand of industrial end-users or intermediaries from different sectors of the economy.

At the national level there are some attempts to process, as insulated and sheathed for cables, some composite materials imported and even to obtain such materials, but so far the required performance have not been achieved. Among units with concerns in this regard we can mention: ICPE, Bucharest Technical University "Gh. Asachi" Iasi, UP Bucharest.

Conclusions

Applicating company is part of the group of mature manufacturers with large dimensions (operating income for the last three years: 25.7 million lei; average number of employees for the same period: 345).

The field of work is "Manufacture of electrical equipment". Products and services provided cover a broad classification, starting from complex electrical systems (photovoltaic and wind energy equipment) up to equipment components (motors, control equipment, special components, etc.). In the services area there are provided measurements, try-outs and testing in a wide range, for electrical components and materials used in this industry.

The orders come, in most, from companies located in Romania, but many products supplied are exported, directly or indirectly. Buyers are numerous and of great diversity, ensuring the independence of ICPE towards major customers. And within manufacturers area such a variety of solutions ensures a real independence.

The development strategy is oriented to diversification. Products supplied are made by own research patents for the applied solutions being held.

Manufacturing cycles and long collection periods generate problems in the management of funds but due to insurance reserves and good planning, no lending sources were required to support production.

Research and innovation capacity provides good competitiveness and allows assuming overall mission, as to be placed at the forefront of similar equipment manufacturers, including the position of the initiator of some activities implemented for the first time in Romania. Average expenditures for CDI for 2009-2013 is about 38% of total operating revenues. Approximately 28% of staff working in CDI.

The management group assures needed skills for covering a complex process, with applications in many industrial activities. Organizational chart meets the requirements of diverse productions with multiple top skills at national and international level, and provides a good measure to maintain competitiveness both at work and at group level.

Quality and environmental system are nationally certified. No quality or environmental issues are registered.

The company has a stable business, securing financial resources necessary for the operation and development, and can complete major and long-term development projects in the business.

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