

ELABORATION OF KEY CONCEPTS RELATING TO COST AND PROFIT CALCULATION WITH PRACTICAL EXAMPLES

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Abstract. *The main objective of this paper is to analyze the necessary preconditions for successful calculation of costs and profit for small enterprises and entrepreneurs. Authors of the paper advocate the use of modern tools of financial management to estimate current profit strategies and elaborate alternative restructuring possibilities in order to make profit or exceed planned values in the operation of a modern business.*

Key Words: *Costs, gross profit, break-even point, swot analysis, alternative strategy.*

1. INTRODUCTION

This paper defines the principles of calculation of costs and profit for small entrepreneurial endeavours. The second part deals with a semi-structured hypothetical case study that emphasizes then significance of having alternative financing and pricing strategies in small enterprises.

2. THE SIGNIFICANCE AND CALCULATION OF COSTS AND PROFIT

Business costs should be known in detail [1, pp. 472-473]. Costs can ruin a business if not well managed, even if sales leverage high revenues. In order to be minimized, costs must be well understood and regularly monitored. Each entrepreneur should maintain a list of monthly costs that will follow each month, even if no sales take place because in this case fixed costs will be known and monitored. Fixed costs represent a critical amount of money that must be paid on monthly basis, in order to settle the liabilities.

What are the examples of typical fixed costs? They can be classified as follows:

- Office and space rent
- Salaries, for those workers who work full time,

- Public utilities (these costs can be both variable or fixed), depending of whether they are used in production or not;
- Insurance, advertising.

If some costs are planned for the entrepreneur's salary or for personal costs they should also be calculated within fixed monthly costs. It is important to remember the golden rule of small business financing: first comes the payment of costs, and salary should be composed of the remaining sum of money. If a business does not survive then the investment is lost as well as chances of planned profit in the following period. Many entrepreneurs contemplating their business' survival do not take salaries for themselves, until the business takes root and is stabilized. After the fixed monthly costs calculation, it is necessary to make an analysis by summing up the individual monthly costs into an annual cost. Fixed monthly costs can vary, because costs such as insurance and advertising are not paid each month.

Direct costs refer to production of a certain product or to providing services. It is important for an entrepreneur to have a clear insight into costs needed for selling a certain product or service, and what is their part in overall costs of the business. It is very easy to determine direct costs, especially when it comes to trade or retail. Simply, direct costs are those that a supplier invoices for the goods that are supposed to be sold afterwards. For a production or a service company sometimes it can be confusing and hard to calculate direct costs so the example that follows will focus on trade. For example, it is hard to calculate fuel consumption costs and link these to a certain product. Those entrepreneurs who have trouble monitoring and bookkeeping direct costs should seek professional assistance in order to avoid having costs greater than revenue.

Let us use a concrete example to illustrate the proper way of calculation of gross profit of a business. We are using the example of an owner of a newsstand. The entrepreneur sells 3,000 newspapers per month.

The publisher's price (direct costs) is 9 dinars, and retail price is 15 dinars. Fixed costs are 12.600 dinars a month.

The question is raised: how to calculate gross profit? Using the following formula it is done in three steps.

Formula 1. Calculation of gross profit

$$\text{Gross profit} = \text{Sales Revenue} - \text{Direct costs}$$

- 1) Multiply direct costs with the total number of sold newspapers: 9 din. \times 3.000 newspapers = 27.000 din. (overall direct costs)
- 2) Multiply the retail price with the number of sold papers: 15 din. \times 3.000 newspapers = 45.500 din. (overall revenue from retail sales)
- 3) Subtract overall direct costs from overall revenue, which results in gross profit: 45.500 din. of retail sales – 27.000 din. of direct costs = 18.500 din. of monthly gross profit.

Here should also highlight another important notion: *net profit*.

In this case, net profit is a profit that is left after the fixed costs are subtracted from the gross profit. In the following example net profit looks like this:

18.500 dinars of gross profit – 12.600 dinars of fixed costs = 5.900 dinars monthly of net profit.

In order to simplify the situation, we have assumed that our newsstand sells only one item: newspapers. The principles of calculation of the gross and net profit remain the same, no matter how many products are offered. However, entrepreneurs should calculate their costs very carefully, and include all costs when preparing a statement.

If positive net profit is realized each consecutive month, then the business finally becomes a successful one. After a certain period of time, the owners are finally able to decide how to spend the hard earned net profit. One of the possibilities is to spend it on personal needs, which is not a very good choice. The other option is to reinvest profit in order to enhance the business and make the future profit even greater than the previous one. In any case, practical choices are left to owners and managers of Small and Medium Business Enterprises (SMEs), and it depends on the goals of the enterprise itself: whether it is short-term comfortable life of the owner and his/her family or development of the SME and its transformation into a successful company.

3. CALCULATION OF SALES AT BREAK-EVEN

This is a very useful indicator of financial analysis. It shows whether the product price is formed properly and whether the business makes profit at a particular selling price. Basically, the break-even analysis shows what quantity, and at what value, of products and services should be sold in order that the business covers its overall costs. [2, pp.321-333]

Let us take another look at our newsstand example and salesperson:

Fixed costs	=	12.600 din.
Sales revenue	=	45.000 din.
Total direct costs	=	27.000 din.
Newspaper retail price	=	15 din.
Direct cost per item	=	9 din.

For the calculation of sales at break-even we shall make use of the following formula:

Formula 2. Calculation of sales at break-even point

$$\text{Sales at break-even} = \frac{\text{Fixed costs}}{\text{Sales price} - \text{direct costs per unit}}$$

The solution for sales at break-even is then: $12.600 / (15-9) = 2.100$ newspapers.

In a similar manner we shall use the following formula to calculate the revenue at break-even:

Formula 3. Calculation of revenue at break-even

$$\text{Revenue at } BE = \frac{FC}{\text{Sales revenue} - \text{Direct Costs}} \times \text{Sales Revenue}$$

The solution for the break-even revenue is then: $12.600 / (45.000-27.000) \times 45.500 = 31.500$ dinars, which can be expressed in percentages, in the following way:

Formula 4. Break-even as percentage

$$BE = \frac{FC}{TR - VC} 100$$

In our example break-even is $12.600 / (45.000 - 27.000) \times 100 = 70\%$

Let us now briefly consider and analyze what the analysis of break-even means in this example. The owner of the newsstand must sell at least 2.100 newspapers each month, i.e. his turnover must be 31.500 dinars in order to cover his business costs. Each newspaper that is sold in numbers over 2.100 presents the owner's profit. The owner of the newsstand usually sells about 3.000 newspapers. Let us take a look at the minimal price that owner can ask and still stay break-even (cover its costs).

Fixed costs	=	12.600 dinars
Sales price	=	?
Direct costs	=	9 dinars
Break-even sales	=	3.000 newspapers

Solution: $(\text{Fixed costs} / \text{Break-even sales}) + \text{Direct costs} = (12.600/3.000) + 9 = 13.2$ dinars.

Having in mind the costs structure of the newsstand it can be concluded that each sale at a price higher than 13.2 dinars makes a profit.

With this information in mind, the newsstand owner can easily manage his/her pricing strategy. For every price change this entrepreneur should carry out the following analysis:

- What are my competitors charging?
- Do I make enough profit to fulfill my personal business plans?
- Will my products be sold at a greater extent if I reduce my prices?
- Will my products still be sold if I slightly increase the prices?

These short questions allow us to analyze the retail price for a newspapers stand, but can be applied to other products as well. The point is that if owners are aware of the influence of costs on profitability, businessmen will be more eager to negotiate their fixed and direct costs, as well as inputs.

4. A PRACTICAL EXAMPLE OF ESTABLISHING AND STARTING AN SME

The first step in every entrepreneurial endeavour is to compare the availability of investment capital and capacity to cover necessary *start-up* or minimal necessary costs to start a business. [3, pp. 143-156]

Start-up costs normally consist of the following items:

- Registration of a simple business can cost, for example, 20,000 dinars, including license, taxes and law services.
- Renting a very small business space in town can cost up 15,000 dinars a month. We can assume that the owner of the office space asks for a 6-month advance payment, which represents a sum of 90,000 dinars.
- Yearly insurance is, for example, 18,000 dinars.

- Minimal monthly accounting / bookkeeping services, is for example, 3,000 dinars.
- Advertising on radio and TV 13,500 dinars.

Eventually, in this particular case, estimated *start-up* costs are 144,500 dinars. Most entrepreneurs cannot financially cover their business individually and must look for out-sourcing and additional sources of finance, as given in the example that follows. If we assume that an entrepreneur has 74.500 dinars of own money at the disposal, the question remains how to secure the remaining 70.000 dinars. A simple finance construction from three sources of finance is given as an example in the following text.

4.1. Significance of combining the potential sources of finance

One of the possible combinations of finance sources can take the following structure:

- Personal capital: 70,000 dinars
- A loan from a micro-credit organization amounting to 45,000 dinars, with interest at 2%
- An interest-free loan from a friend: 25.000 dinars
- Total assets of the entrepreneur: 144.500 dinars

4.2. Estimated annual sales and revenue in this particular example

An estimation of annual sales can sometimes be very complicated, especially for a *start-up* enterprise. It is influenced by many variables. For example, the location of a business, competition, consumers' preferences, even current political – economic events. One of the ways to approach this problem is to carry out research of the common industries / companies in the surrounding, which can be done by using a popular SWOT (Strengths, weaknesses, opportunities and threats) analysis [4, p.47-48]. The results can be useful, not only for the sales estimate, but also for rating future company's capabilities and chances on a certain market. For example, if we consider a textile shop for youth, it may be necessary to have the following selling items:

- T-shirts,
- Trousers and jeans,
- Jackets.

Since the competition is sharp, we can assume that prices are slightly lower than in other retail objects of that kind.

Table 1. Projection of annual sales and revenue

No.	Item	Sales	Input price	Sales price	Revenue
1.	T-shirts	1,000	300	510	510,000
2.	Trousers	250	600	1,050	262,500
3.	Jeans	400	750	1,200	480,000
4.	Jackets	40	5,100	6,900	276,000
	Total annual sales in dinars:				1,528,500

4.3. Significance of fixed costs

It is necessary to carefully make a list of all fixed costs, because entrepreneurs have much less influence on them than they have on variable costs. As mentioned earlier these include rent, salaries, electricity and similar.

4.4. Calculation of an expected annual profit in this example

Using the previously given formula, we can calculate the gross profit. First, we calculate overall direct costs, as follows:

$$1,000 \text{ T-shirts} \times 300 - 250 \text{ trousers} \times 600 + 400 \text{ jeans} \times 750 + \\ 40 \text{ jackets} \times 5,100 = 954,000 \text{ dinars of overall direct costs}$$

In the second step we apply the formula for Gross profit, as follows:

$$\text{Gross profit} = \text{Sales Revenue} - \text{Direct costs} \\ 1,528,500 \text{ din. of annual sales} - 954,000 \text{ din. of direct costs} = \\ 574,500 \text{ dinars.}$$

This seems as an excellent result, but it neglects fixed costs and the repayment of micro-credit. If we assume that fixed costs are 700,000 dinars, than this business has a net loss:

$$574,500 \text{ din. of gross profit} - 700,000 \text{ din. of fixed costs} = \\ 125,500 \text{ net loss}$$

This is a very disappointing result, which shows that the business is at loss for 10,458 dinars a month. This trend will continue until the business increases turnover or until it reduces costs. The initial costs projection does not justify the calculation and a business like this is not well advised for entry. The estimate of gross profit was a positive one, but fixed costs of this business are so high that they can ruin the sustainability of this endeavour. That is why entrepreneurs must know their costs in detail, and must manage them efficiently in order to remain profitable.

4.5. Elaboration of alternative strategies in the development of entrepreneurship in this example

Differentiation [5, 177] of the business plan in order to overcome this situation could look, for example, like this:

- Increasing prices of T-shirts from 510 to 600 dinars, and prices of trousers from 1,050 to 1,200.
- An increase in sales of T-shirts and trousers, to 1,300 T-shirts and to 300 for trousers.
- Replacement of the jeans suppliers with those who offer a purchase price below 600 dinars.
- Reduction of retail price for jackets from 6,900 to 6,300 dinars and a sales enhancement from 40 to 70 pieces.
- Enrichment of assortment (products range) with socks; selling them at price of 105 dinars, and purchasing for 45 dinars.

After all these changes took place, an alternative projection looks like this:

Table 2. Projection of revenue and costs

No.	Item	Sales	Input price	Selling price	Revenue	Direct costs	Gross profit
1.	T-shirts	1,300	300	600	780,000	390,000	390,000
2.	Trousers	300	600	1,200	360,000	180,000	180,000
3.	Jeans	400	600	1,200	480,000	240,000	240,000
4.	Jackets	70	5,100	6,300	441,000	357,000	84,000
5.	Socks	500	45	105	52,500	22,500	30,000
Total in dinars:					2,113,500	1,189,500	924,000

4.6. Results of an alternative business and financial strategy

Now, after all the changes have been made, it is visible that our hypothetical business looks completely different:

- Sales income enhanced to 2,113,500 dinars
- Direct costs enhanced to 1,189,500 dinars
- Gross profit enhanced to 924,000 dinars
- Assumed fixed costs 700,000 dinars

Thanks to the alternative financial strategy, our net result is now positive, as follows:

924,000 din. gross profit – 700,000 din. of fixed costs =

224,000 netprofit

The key of business success is always maximizing gross profit with the given *start-up* and operational costs. In the given example *start-up* costs were the same despite sales, which varied from 1,000 to 1,300 T-shirts. Fixed costs such as rent and salaries do not rise if the sales are raised. Naturally, there is a border (*lat. finis*) to which it is acceptable to go with the stretching of fixed costs. For example, if this entrepreneur would try to sell 5,000 T-shirts instead of 1,300, that would possibly demand a larger sales venue or an extra salesperson employed. That would then definitely increase the fixed costs. This whole example relates to one more important question of operative management, and that is the capacity of resources in an SME. Capacity management relates to the number of consumers that can be served by one salesperson, how many items can be properly installed for sales, what level of supplies should be maintained in order to realize the planned monthly sales volume. Capacity management provides better management of the costs. Although the costs theory depicts in detail the different models and possibilities in this area, experience in business is still the best way to come to optimum solutions for costs. Finally, let us consider the sales at break-even in this alternative scenario:

Sales at break-even sales in this case

Sales revenue	=	2.113.500 dinars
Fixed costs	=	700.000
Direct costs	=	1.189.500

Using the previous formula: Fixed costs / Sales revenue – Direct costs) × Sales revenue, the break-even sales revenue is as follows:

The solution to the previous problem:

$$700,000 / (2,113,500 - 1,189,500) \times 2,113,500 = 1,601,135.36$$

This entrepreneur should achieve annual revenue of at least 1,601,135.36 dinars in order to cover overall business costs. This is the minimal amount and in this case does not include personal costs of the entrepreneur. Other alternative scenarios [6, p.87] can also be used to achieve profit maximization as the main objective in modern business. Entrepreneurs should always bear in mind that a business itself carries many risks [7, pp.1-10.]. Obviously, it does not always turn to be as expected, and that is why a back-up plan should always be readily available for the entrepreneur.

5. FINAL CONSIDERATIONS

Financial planning, as one of the key applied areas in the management science, is by far the leading business function in an enterprise. Instruments and structure we have presented are used as tools for finance managers who have operational and strategic responsibility in managing the company's resources, investments and solvency. A successful management of cash flow of an enterprise has exactly that purpose, and taking adequate strategic managerial decisions on calculation of cost and profit is the function of enhancing the competitive market position of an enterprise.

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RAZMATRANJE KLJUČNIH KONCEPATA OBRAČUNA TROŠKOVA I PROFITA SA PRAKTIČNIM PRIMERIMA

Milan Lj. Stamatović, Milan B. Vemić

Ovaj rad ima za cilj analizu potrebnih preduslova za uspešan obračun troškova i profita kod malih preduzeća i preduzetnika. Autori se zalažu za korišćenje savremenih alata finansijskog menadžmenta u proceni tekućih strategija ostvarenja profita kao i razvoja alternativnih mogućnosti presrtukturiranja troškova radi ostvarenja ili prebačaja planiranih vrednosti u poslovanju savremenog preduzeća.

Ključne reči: Troškovi, bruto profit, prelomna tačka rentabilnosti, swot analiza, alternativna strategija.