



Synchronized Accounting - the Vector of Progress and Performance in Economic Entities

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Abstract: Synchronous management accounting consists in identifying specific operations that an economic entity can perform internally to find the most efficient solutions to eliminate certain dysfunctions in the entire value chain, in creating certain much higher values, which can be shared by all actors in the chain. Synchronous management requires a cultural change, but also a management system and an accounting system. A change in organizational culture that is not supported by an **adequate accounting system** and relevant performance indicators is inevitably doomed to failure. The new tools, techniques and methods characteristic of synchronized management accounting advocate the abandonment of the paradigm of scientific organization for a new paradigm that considers the economic entity as a system.

Keywords: synchronized accounting; dysfunctions; synchronized management; accounting system; performance

JEL Classification: M41

1. Introduction

Synchronized management strengthens everyone's creative power (Jaeck, 2008, p. 11). All employees of an economic entity and its partners, such as customers or suppliers, are potential sources of improvement in processes, products and services.

Eliminating dysfunctions throughout the value chain and creating greater value for the end customer generates gains that can be shared by all actors in the chain. But, the people involved will not contribute to the increase in value if they are not asked for their suggestions. In other words, without an organizational culture of cooperation, synchronized management will be doomed to failure.

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Many economic entities use tools (total quality management, reengineering business processes, and six sigma) that can be associated with synchronized management. However, most strive to implement the approach and achieve tangible results.

In terms of synchronized management, most managers think first of the “Toyota production system” and design only their production demand. They see synchronized management as a set of tools that they choose and use, depending on their preferences.

Accountants and management controllers show great reluctance to synchronize. They are trying to adopt a part of a philosophy, which must be seen as a whole. It's like you want to develop new parts for a car and you don't consider the impact on other parts, hoping that the vehicle will work satisfactorily. For professionals, synchronized management is a new management system that is facing a **change in the accounting system**.

2. Literature Review

In the current economic stage, more than ever, the “world of costs”, although it has certain disadvantages, has an important place in the strategic considerations of economic entities.

During the evolution of technical progress, the aspects of conservatism and traditionalism noted, in terms of costing, have become much more obvious. Thus, there was a need to improve the calculation techniques and procedures appropriate to the stage in which the production technology has evolved.

Several authors strongly argue in the specialized literature for abandoning traditional or classical cost information processing systems because they are not appropriate for current requirements, and for introducing certain advanced or modern methods, because their effectiveness is far superior. Standard cost calculation, traditional job-order costing systems and traditional process costing systems are still widely used. All indirect expenses, according to the classical calculation systems, are dimensioned according to the volume of activity carried out within the economic entities. Costing systems are based exclusively on the order method or the phase method, sometimes combined with procedures specific to the conditions in each economic entity.

Therefore, the calculation of costs within economic entities in Romania, retains a conservative character, in most cases, because the methods applied are the same as those used four decades ago, although the character of production in our country has experienced an upward trend.

One of the disadvantages of classical calculation systems is that they offer a low information capacity, because it cannot provide operational information to the

management of the economic entity to make the appropriate decisions in a timely manner. The post-calculation performed by using traditional methods leads to obtaining late information, which is inoperative, but also to reflecting aspects of production that cannot be intervened. Changes in competition conditions, both in internal and external markets, the continuous evolution of technical progress, have left their mark on traditional calculation systems, characterizing them as inefficient. In the current economic environment, the economic entity is computerized and automated, the life cycle of products is short, services are constantly evolving, adapting to customer requirements.

Thus, in the sphere of competition we observe an evolution of certain criteria that characterize the way of its manifestation, from quantitative criteria (price), to qualitative criteria (security of services offered, product quality, etc.). It is obvious that the traditional information system of management accounting integrates the qualitative aspects only to a small extent, limiting itself to the quantitative ones.

At the beginning of the 21st century, it became necessary to better adapt the tools of management accounting to the reality of the economic environment, to provide managers with the means-indicators - to make efficient and systemic decisions to achieve the performance of economic entities. Thus, new paradigms of managerial accounting have emerged based on a systemic approach to continuous improvement and perfecting the economic entities.

In *Lost Relevance*, published in 1987, Johnson and Kaplan found that management accounting practices had stagnated since the 1920s. But thirty years later, management accounting has changed greatly, including ABM (*activity-based management*). The acute need for the management of the economic entity was increasingly felt by building a new pertinent decision-making information system, adapted to the current requirements in terms of **synchronized management accounting**.

3. Research Methodology

The scientific approach is based on the practical experiences of the economic entities of meat industrialization in Romania and on the study of the specialized literature. Empirical and theoretical research methods and techniques were used to collect useful information for this study.

Theoretical documentary research is characteristic of any scientific approach, aiming at acquiring the necessary, new, advanced knowledge to start the empirical research process. Theoretical research methods were used, such as: non-participatory observation, text analysis, classification, ordering and systematization of information, data interpretation, etc. The information sources used to conduct this

research include: specialized books, national or international, specialized articles published in renowned journals, recognized nationally or internationally, legislation, regulations of national and international professional bodies, studies and research conducted by various professional bodies.

Based on the practical studies of other authors, on the review of the specialized literature, an important step in the research approach was represented by the *empirical research*, by using the methods: deductive method, statistical method, case study, graphic representation.

The general conclusion of the methodology used is that the research approach was built by combining the two essential forms of any research - theoretical and empirical, going on the axis of rationalism-empiricism, the middle way, by choosing a hypothetical-deductive reasoning, and in some situations, logical-inductive.

4. Performance Measurement Indicators Used by Applying Synchronized Accounting

To reduce the gap between profit, return on investment, cash flow and local indicators, synchronized management proposes the use of three indicators called **constraint theory indicators**.

These indicators must be purely financial in order to demonstrate the economic entity's progress towards its objectives. Specifically, three questions must be answered: "How much money is generated by the economic entity? What is the amount of money blocked by the economic entity? What are the amounts transformed into formal definitions" (Goldratt, 1990, p. 19). The synchronized management indicators are (Jaeck, 2008, p. 121).

✓ **Marginal income (MI):** The rate at which the system generates money through sales. Specifically, this means fresh money coming from outside the "own walls". It constitutes turnover (T) less fully variable costs (FVC) (which varies only when sales vary, especially for raw materials);

✓ **Investment (I):** the financial resources that the system invests to generate profit. The investment can be divided into two categories: (1) inventories of materials, work in progress, finished products and (2) other assets of the economic entity. The value of inventories of goods and finished products is the fully variable cost (FVC);

One of the objectives of this evaluation system is to eliminate the generation of profit generated by the cost allocation process. With this methodology it is impossible to increase short-term profit by increasing stocks of finished products.

✓ **Operating expenses (OE):** Expenditure of the system to use the investments and to generate marginal income (MI). The constraint theory does not classify expenses

as fixed, variable, direct or indirect. Operating expenses are other costs than the fully variable costs. Their increase or decrease is analysed on a case-by-case basis and their impact on profit is taken into account. **Synchronized accounting** considers these three indicators to be sufficient to manage an economic entity. The links with the profit and return on investment are as follows:

- ✓ profit = Marginal Income - Operating Expenses (MI -OE);
- ✓ cash-flow = Marginal Income-Operating Expenses +/- Investment (MI - OE +/- I);
- ✓ Return on investment = Marginal Income - Operating Expenses / Investment (MI-OE/I).

The ideal decision is one that involves an increase in marginal income, a decrease in operating expenses and a decrease in investment.

However, any decision that has a positive impact on the return on investment is a decision that leads the economic entity to its goal. Justice of the peace, the fundamental indicator is the return on investment.

5. The Main Difference between the Constraints Approach and the Traditional Approach: Costs

The main difference between the traditional approach and the constraints approach is the reduction of costs. Constraint theory considers that there is a level of cost reduction from which the effects produced on economic entities are contrary to its objectives.

Every business requires fixed costs to produce and sell its products and services. The theory of constraints considers them as operating expenses (OE): the sum of costs, regardless of whether a unit is produced or not. A certain level of operating expenditure is required to lead an economic entity to a certain level of production (Jaeck, 2008, p. 125). We can consider that it is the same for investments (I). Therefore, there is a limit of practice (well above zero) below which the economic entity is not able to produce value for customers.

For economic entities, which are still working on a mass model, it is certainly possible to reduce operating and investment costs. But these are, in essence, one-time savings. Eventually, all the “fat” was removed and only the “muscles” remained. Continuing to reduce operating expenses and investment costs will prevent the economic entity from achieving its objectives.

6. Reducing Costs or Increasing Marginal Income?

An economic entity for meat industrialization registers a turnover of 50,000 lei but the production is loaded with 70% of its capacity. The variable costs amount to 20,000 lei. The operating expenses register a value of 20,000 lei and the stocks have a value of 7,000 lei (materials, finished products). The analysis of the two possibilities for reducing costs and increasing marginal income must answer the question: which of the decisions is the best?

We assume that, in a year, an economic entity would conscientiously implement a Lean program. The workload of resources would be close to 100%. Thus, within the economic entity it would be possible to save an amount of 10,000 lei. This amount of 10,000 lei will be used to cover operating expenses. In addition, the economic entity of meat industrialization will reduce the level of stocks by the amount of 6,000 lei. What will happen in the second year if in the first year things went well? The potential for increased marginal income will be considered. We will analyse the situation in which a turnover of 50,000 lei is registered, obtained from 100 clients. If the economic entity manages to have 100 new customers from all over the country, the turnover will triple. Therefore, the variable costs will increase by the amount of 60,000 lei and within this economic entity 50% more employees will be employed. The level of investments will pass, at the same time, from the amount of 7,000 lei to the amount of 21,000 lei.

Now, the potential for marginal income growth can be considered. Although, the costs increased by 50,000 lei, the increase in turnover reaches 10,000 lei. Therefore, the profit growth potential reaches 60,000 lei, without making a certain rationalization effort. Even if these estimates are optimistic of 30%, the result will be increased by 10,000 lei compared to the cost reduction solution. From a practical point of view, such an increase in sales volume will certainly require improving the reliability and quality inherent in the Lean method, in order to attract 200 new customers. But, as Womack and Jones said, if prices can be delivered with greater reliability, the prices of mainstream products must not be respected (Womack, Jones & Thinking, 1996).

Moreover, we consider that marginal income is the first of the indicators that force managers to appreciate the system as a whole because it is possible to increase marginal income only by optimizing the constrained resource. Focusing on marginal income helps managers avoid optimizing structures without considering the purpose of the system as a whole.

Constraint theory does not calculate product costs. Goldratt says it's not necessary. "Constraints are essential classifications that replace the role of products (...)", "it is necessary to assess the impact of a decision, not a product" (Goldratt,

1990, p. 57). When making a decision, the following three questions need to be answered:

- ✓ How much will marginal income change?
- ✓ How much will the investment change?
- ✓ How much will operating expenses change?

In order to answer these three questions, especially the first, one must understand the reality between the constraint of the system and the products or services provided by the economic entity. The available constraint time is limited. Different products use different constraint availability. One product may require five minutes of restraint, while another may require half an hour.

It seems obvious that the product that lasts only five minutes must have priority!

It is also desired to increase the marginal income of the economic entity. Different products have different marginal incomes. A product whose marginal income is 100 lei must have priority over a product whose marginal income is 40 lei. As can be seen, it is about improving the product that has the highest marginal income and uses the least constrained resources. So there is the problem of comparing the two products - one that has a higher marginal income, the other that uses the lowest constraint. How will it be decided?

To resolve this conflict, it is necessary to adopt a relative indicator that takes into account both parameters. In order to decide which product contributes the most to the purpose of the economic entity, the marginal income will be divided by the time the constraint is used. This indicator is called “*marginal income per unit of consumption of the constraint*” (example in table 1).

Table 1. Example of Application of the Indicator “Marginal Income per Unit of Consumption of the Constraint”

| | smoked pork neck | smoked pork pastrami |
|---|------------------|----------------------|
| Marginal income per unit of product (lei) | 12 lei | 14 lei |
| Minutes of use of constraint | 2 | 4 |
| Marginal income/period of constraint | 6 lei | 3.5 lei |

Source: Own Projection

In this case, within this economic entity, two products are sold: smoked pork neck and smoked pork pastrami.

The smoked pork neck product is less constrained than the smoked pork pastrami product, but the pork neck product has a higher flow.

Managers must decide which element to produce as a matter of priority. The marginal income indicator per unit of consumption of the constraint shows that by manufacturing the pork neck product, the economic entity increases its marginal income by 6 lei per minute and by manufacturing the pork pastrami product, the increase is only 3.5 lei per minute.

Selling a product or service that is more expensive than fully variable costs and does not increase operating expenses therefore contributes to increasing profits.

Constraint theory does not establish any correlation between the volume of production or any other variable of the system and operating expenses. The decision maker must be able to estimate the impact on operating expenses.

When the market demands more than the economic capacity of the economic entity, the constraint theory recommends the use of marginal income per unit of constraint, in order to focus on the products that contribute to the achievement of the economic entity's purpose.

7. Use of Synchronized Management Accounting in an Economic Entity for meat Industrialization

A. Presentation of expenses and manufactured products, by sections - situation without constraints:

The operating expenses of the *Freshness Section* within the economic entity for meat industrialization, for a given period, are presented in table 2 and in table number 3 are presented the products of this section. We analysed for each product of the section, based on the information provided, the database related to the products obtained in the same period:

- ✓ product name;
- ✓ selling price (P);
- ✓ fully variable costs (FVC) associated with the product;
- ✓ marginal income (MI) generated by a unit produced: $T - FVC$;
- ✓ Limited resource usage time (T_m).

Table 2. Operating Expenses of the Freshness Section

| Expenses | lei |
|------------------------------|-----------|
| 1. Staff salaries | 21,000.00 |
| 2. Electricity | 600.00 |
| 3. Rent | 600.00 |
| 4. Depreciation of equipment | 500.00 |

| | |
|---------------------------------------|-----------|
| 5. Phone | 200.00 |
| 6. Advertisement | 200.00 |
| 7. Transport | 400.00 |
| Other types of expenses | 2,700.00 |
| Total general expenses of the section | 26,200.00 |

Source: Own Projection

The products are presented in descending order of their contribution to the benefits of the economic entity - MI/Tm when the constraint is within the economic entity. If the constraint is outside the economic entity, the last column is not necessary, because it is not necessary to select the products that will be sold. In this case, the important factor to consider is the MI of each product and the impact of each decision on operational expenditure. Within the analysed section, 9 products are manufactured, namely: sausages made of chicken breast, sausages made of pork, polish sausage, polish sausage obtained from chicken, parizer obtained from chicken breast, parizer made of pork, peasant parizer, homemade pork drum and leber. The most profitable product manufactured by the economic entity is the product of chicken breast sausages because it generates a marginal income of 0.50 lei per minute of using the constrained resource. The least profitable product is the leber product because it generates a marginal income of 0.16 lei per minute of using the constrained resource.

Table 3. Products Manufactured within the Fresh Section

| Product name | Price/kg lei | FVC lei | Marginal income per unit (lei) | Time of use of constraint (minutes) | Marginal income during the period of constraint (lei/minute) |
|-------------------------|--------------|---------|--------------------------------|-------------------------------------|--|
| Chicken breast sausages | 18.87 | 11.30 | 7.57 | 15 | 0.50 |
| Pork sausages | 14.17 | 8.34 | 5.83 | 15 | 0.38 |
| Polish sausage | 13.59 | 7.6 | 5.99 | 20 | 0.29 |
| Polish chicken sausages | 13.83 | 6.2 | 7.63 | 20 | 0.38 |
| Chicken breast parizer | 15.62 | 8.23 | 7.39 | 18 | 0.41 |
| Pork parizer | 15.04 | 7.2 | 7.84 | 20 | 0.39 |
| Peasant parizer | 16.23 | 8.11 | 8.12 | 19 | 0.42 |
| Homemade pork drum | 16.71 | 7.22 | 9.49 | 20 | 0.47 |
| Leber | 4.21 | 2.01 | 2.2 | 13 | 0.16 |

Source: Own Calculations

Within the table 4 are presented the expenses registered for a period of one month, of the *Raw-Dried Section* and in table 5, the products manufactured in this section

are presented. In this section are manufactured 3 types of products, namely: Banat salami, Toscano salami and Sinaia salami. The most profitable product manufactured in this section is the Banat salami product because it generates a marginal income of 0.83 lei per minute of using the constrained resource, followed by the Toscano salami product which generates a marginal income of 0.79 lei per minute.

The least profitable product is the Sinaia salami product because it generates a marginal income of 0.74 lei per minute of using the constrained resource.

Table 4. Operating Expenses of the Raw-Dried Section

| Expenses | Lei |
|---------------------------------------|-----------|
| 1. Staff salaries | 6,000.00 |
| 2. Electricity | 500.00 |
| 3. Rent | 800.00 |
| 4. Depreciation of equipment | 600.00 |
| 5. Phone | 500.00 |
| 6. Advertisement | 400.00 |
| 7. Transport | 400.00 |
| Other types of expenses | 2,000.00 |
| Total general expenses of the section | 11,200.00 |

Source: Own Projection

Table 5. Products Manufactured within the Raw-Dried Section

| Product name | Price/kg lei | FVC lei | Marginal income per unit (lei) | Time of use of constraint (minutes) | Marginal income during the period of constraint (lei/minute) |
|----------------|--------------|---------|--------------------------------|-------------------------------------|--|
| Banat salami | 30.65 | 20.60 | 10.05 | 12 | 0.83 |
| Toscano salami | 33.35 | 21.45 | 11.9 | 15 | 0.79 |
| Sinaia salami | 28.54 | 18.90 | 9.64 | 13 | 0.74 |

Source: Own Calculations

Within the table 6 are presented the expenses registered for a period of one month, within the *Salami Section* and in table 7, there are presented the products manufactured within this section. In this section are manufactured 12 types of products, namely: dry summer salami, extra pork salami, Victoria salami, summer salami, peasant salami, homemade salami, rustic salami, appetite salami, ham salami, Italian salami, French salami and butcher salami.

Table 6. Operating Expenses of the Salami Section

| Expenses | lei |
|---------------------------------------|-----------|
| 1. Staff salaries | 10,000.00 |
| 2. Electricity | 500.00 |
| 3. Rent | 800.00 |
| 4. Depreciation of equipment | 600.00 |
| 5. Phone | 500.00 |
| 6. Advertisement | 400.00 |
| 7. Transport | 400.00 |
| Other types of expenses | 4,000.00 |
| Total general expenses of the section | 17,200.00 |

Source: own projection

The most profitable manufactured in this section, is the dry summer salami product because it generates a marginal income of 0.66 lei per minute of use of the constrained resource, followed by the extra pork salami product, which generates a marginal income of 0.66 lei per minute. The least profitable products are French and Italian salami, because they generate a marginal income of 0.28 lei per minute of using the constrained resource.

Table 7. Products Manufactured within the Salami Section

| Product name | Price/kg lei | FVC lei | Marginal income per unit (lei) | Time of use of constraint (minutes) | Marginal income during the period of constraint (lei/minute) |
|-------------------|--------------|---------|--------------------------------|-------------------------------------|--|
| Dry summer salami | 27.25 | 17.22 | 10.03 | 15 | 0.66 |
| Extra pork salami | 18.03 | 8.32 | 9.71 | 16 | 0.60 |
| Victoria salami | 15.68 | 8.46 | 7.22 | 17 | 0.42 |
| Summer salami | 15.32 | 8.9 | 6.42 | 15 | 0.42 |
| Peasant salami | 22.48 | 14.32 | 8.16 | 16 | 0.51 |
| Homemade salami | 15.86 | 6.33 | 9.53 | 15 | 0.63 |
| Rustic salami | 15.03 | 7.21 | 7.82 | 14 | 0.55 |
| Appetite salami | 17.06 | 8.90 | 8.16 | 14 | 0.58 |
| Ham salami | 9.50 | 4.32 | 5.18 | 16 | 0.32 |
| Italian salami | 8.11 | 4.11 | 4 | 14 | 0.28 |
| French salami | 13.22 | 9 | 4.22 | 15 | 0.28 |
| Butcher salami | 14.82 | 6.90 | 7.92 | 14 | 0.56 |

Source: Own Calculations

In table 8 there are presented the expenses registered for a period of one month within the *Specialties Section*:

Table 8. Operating Expenses of the Specialties Section

| Expenses | lei |
|---------------------------------------|-----------|
| 1. Staff salaries | 15,000.00 |
| 2. Electricity | 600.00 |
| 3. Rent | 600.00 |
| 4. Depreciation of equipment | 500.00 |
| 5. Phone | 200.00 |
| 6. Advertisement | 200.00 |
| 7. Transport | 400.00 |
| Other types of expenses | 2,700.00 |
| Total general expenses of the section | 20,200.00 |

Source: Own Projection

In table 9 there are presented the products manufactured within the *Specialties Section*. In this section, 13 types of products are manufactured, namely: fillet muscle, gypsy muscle, Azuga muscle, peasant ham, pork pastrami, kaizer, smoked neck, smoked boneless, extra smoked ribs, smoked ribs, smoked ham, bacon, and smoked sheep pastrami. The most profitable product manufactured in this section is the bacon product because it generates a marginal income of 1.49 lei per minute of using the constrained resource, followed by the muscle fillet product which generates a marginal income of 0.74 lei per minute. The least profitable product is smoked sheep pastrami, because it generates a marginal income of 0.41 lei per minute.

Table 9. Products Manufactured within the Specialties Section

| Product name | Price/kg lei | FVC lei | Marginal income per unit (lei) | Time of use of constraint (minutes) | Marginal income during the period of constraint (lei/minute) |
|-----------------------|--------------|---------|--------------------------------|-------------------------------------|--|
| Fillet muscle | 24.38 | 13.90 | 10.48 | 14 | 0.74 |
| Gypsy muscle | 24.61 | 17.5 | 7.11 | 15 | 0.47 |
| Azuga muscle | 24.49 | 14.78 | 9.71 | 14 | 0.69 |
| Peasant ham | 21.76 | 14.52 | 7.24 | 16 | 0.45 |
| Pork pastrami | 22.54 | 15.78 | 6.76 | 14 | 0.48 |
| Kaizer | 25.52 | 15.53 | 9.99 | 14 | 0.71 |
| Smoked neck | 23.46 | 13.99 | 9.47 | 17 | 0.55 |
| Smoked boneless | 14.99 | 7.55 | 7.44 | 13 | 0.57 |
| Extra smoked ribs | 18.08 | 10.77 | 7.31 | 12 | 0.60 |
| Smoked ribs | 22.83 | 13.68 | 9.15 | 14 | 0.65 |
| Smoked ham | 22.24 | 16.90 | 5.34 | 11 | 0.48 |
| Smoked sheep pastrami | 18.54 | 13.2 | 5.34 | 13 | 0.41 |
| Bacon | 36.05 | 13.7 | 22.35 | 15 | 1.49 |

Source: Own Calculations

B. In the event of factory constraints:

If the staff employed within the economic entity has prepared this information, then financial performance can be predicted, depending on the sales mix or even simulations can be performed to anticipate the impact of a decision on the result of the economic entity. The information used to make these forecasts or simulations is as follows. In table 10, we find the sales forecast for each product, the cumulative use of the constraint and the marginal income of each product.

It will be studied where the constraints are in the factory. In this case, the market buys all manufactured products. We will analyse, *Freshness Section*.

The human resource works 8 hours a day, 22 hours a month. If its efficiency is 95%, it is available 10,032 minutes per month. 8 people are employed in this section. If their efficiency is 95%, the constrained resources are available 80,256 minutes per month.

Table 10. Estimation of the Maximum Sales Mix

| Product | Demand forecast (kg) | Maximum mix of marginal income (kg) | Sales mix (kg) | Cumulative use time of constraint (%) | | Marginal income during the constraint period | |
|-------------------------|----------------------|-------------------------------------|----------------|---------------------------------------|-------|--|----------|
| | | | | | | | |
| Chicken breast sausages | 850 | 850 | 850 | 15.88 | 15.88 | 6,434.5 | 6,434.5 |
| Pork sausages | 661 | 661 | 661 | 28.23 | 28.23 | 3,853.63 | 3,853.63 |
| Polish sausage | 400 | 400 | 340 | 38.19 | 36.7 | 2,396.0 | 2,036.6 |
| Polish chicken sausages | 400 | 400 | 350 | 48.15 | 45.42 | 3,052 | 2,670.5 |
| Chicken breast parizer | 520 | 520 | 520 | 59.81 | 57.08 | 3,842.8 | 3,842.8 |
| Pork parizer | 300 | 300 | 300 | 67.28 | 64.55 | 2,352 | 2,352 |
| Peasant parizer | 750 | 750 | 750 | 85.03 | 82.3 | 6,090 | 6,090 |
| Homemade pork drum | 404 | 404 | 404 | 95.09 | 92.36 | 3,833.96 | 3,833.96 |
| Leber | 550 | 300 | 550 | 99.94 | 97.21 | 660 | 1,210 |

Source: Own Calculations

Total marginal income of the section: 32,514.89 32,323.99

| | | |
|---------------------|-----------|-----------|
| Operating expenses: | 26,200.00 | 26,200.00 |
| Profit: | 6,314.89 | 6,123.99 |
| Investment: | 90,000.00 | 90,000.00 |
| Annual ROI: | 84.19% | 81.65% |

Analysis of the data from table 10 shows that the constrained resource of the economic entity needs additional capacity to meet all the expected demand.

In order to decide which products should be manufactured, the theory of constraints classifies products, according to the marginal income generated by the constrained resource. In this case, the economic entity can satisfy the entire demand, except the leber product. The maximum profit obtained by this economic entity will be 6,314.89 lei. However, for marketing reasons, the economic entity must produce the leber product. The economic entity must have, according to table 10, 3,250 minutes to manufacture another 250 kg of the leber range.

I. The first analysis - increasing the capacity of the constrained resource accompanied by an increase in operational expenses:

Table 11. Estimation of the Maximum Sales Mix after Recruitment

| Product | Demand forecast (kg) | Maximum mix of marginal income (kg) | Sales mix (kg) | Cumulative use time of constraint (%) | | Marginal income during the constraint period | |
|-------------------------|----------------------|-------------------------------------|----------------|---------------------------------------|-------|--|----------|
| Chicken breast sausages | 850 | 850 | 850 | 15.88 | 15.88 | 6,434.5 | 6,434.5 |
| Pork sausages | 661 | 661 | 661 | 28.23 | 28.23 | 3,853.63 | 3,853.63 |
| Polish sausage | 400 | 400 | 340 | 38.19 | 36.7 | 2,396.00 | 2,036.60 |
| Polish chicken sausages | 400 | 400 | 350 | 48.15 | 45.42 | 3,052 | 2,670.5 |
| Chicken breast parizer | 520 | 520 | 520 | 59.81 | 57.08 | 3,842.8 | 3,842.8 |
| Pork parizer | 300 | 300 | 300 | 67.28 | 64.55 | 2,352 | 2,352 |
| Peasant parizer | 750 | 750 | 750 | 85.03 | 82.3 | 6,090 | 6,090 |
| Homemade pork drum | 404 | 404 | 404 | 95.09 | 92.36 | 3,833.96 | 3,833.96 |
| Leber | 550 | 550 | 550 | 100 | 100 | 1,210 | 1,210 |

Source: Own Calculations

| | | |
|---------------------------------------|-----------|-----------|
| Total marginal income of the section: | 33,064.89 | 32,323.99 |
| Operating expenses: | 26,700.00 | 26,700.00 |
| Profit: | 6,364.89 | 5,623.99 |
| Profit difference: | | 740.90 |
| Investment: | 90,000.00 | 90,000.00 |
| Annual ROI: | 84.86% | 74.98% |

The staff in charge of constrained resources had the idea to recruit an additional person to work part-time to improve the use of constraint.

The effectiveness of the constraint would go from 95 to 100%, which would gain 3,250 minutes per month. Operating expenses would increase by 500 lei per month. With the 3,250 minutes of production released at the level of the constrained resource, it is now possible to manufacture another 250 kg of leber.

So, the idea should be accepted. Although the approval of this idea is logical, it could never be approved in an economic entity that uses cost accounting and local efficiency indicators.

In fact, the efficiency of the new income will not be very high, because it will only work in phases of constrained resource settings (cost accounting does not recognize the existence of a constrained resource).

II. The second analysis - Reducing the price for a customer in exchange for an increase in sales volume:

We will analyse the situation in which a customer of the economic entity of meat industrialization, requests a 30% discount on the product of chicken breast sausages, in exchange for an increase in the volume of purchases of 30%.

If the market is refused, the meat preparation will no longer be sold because it is the only customer of the preparation of chicken sausages. Let's first quantify the impact of the loss of this market (see table 12).

In table 12, we estimated the sales mix for all products in the *Freshness Section*, but without the manufacture of chicken breast sausages. We made an estimate of the acceptance of the offer for the product chicken breast sausages in Table 13 and in Table 14, we analysed the consequences of accepting the offer for the product chicken breast sausages.

If the product of chicken breast sausages is no longer sold, the constrained resource is no longer constrained, which allows us to completely manufacture other products required on the market. What would have happened if the offer had been accepted?

If the discount is granted, chicken breast sausages becomes the least profitable product compared to other products made in this factory. This information allows us to know immediately that the acceptance of the offer will diminish the profit of the economic entity.

Table 12. Estimation of the Sales Mix without the Manufacture of Chicken Breast Sausages

| Product | Demand forecast (kg) | Maximum mix of marginal income (kg) | Sales mix (kg) | Cumulative use of constraint (%) | | Marginal income during the constraint period | |
|-------------------------|----------------------|-------------------------------------|----------------|----------------------------------|-------|--|----------|
| Chicken breast sausages | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pork sausages | 661 | 661 | 661 | 12.35 | 12.35 | 3,853.63 | 3,853.63 |
| Polish sausage | 400 | 400 | 400 | 22.31 | 22.31 | 2,396.00 | 2,396.00 |
| Polish chicken sausages | 400 | 400 | 400 | 32.27 | 32.27 | 3,052 | 2,052 |
| Chicken breast parizer | 520 | 520 | 520 | 43.93 | 43.93 | 3,842.8 | 3,842.8 |
| Pork parizer | 300 | 300 | 300 | 51.40 | 51.40 | 2,352 | 2,352 |
| Peasant parizer | 750 | 750 | 750 | 69.15 | 69.15 | 6,090 | 6,090 |
| Homemade pork drum | 404 | 404 | 404 | 79.21 | 79.21 | 3,833.96 | 3,833.96 |
| Leber | 550 | 550 | 550 | 88.11 | 88.11 | 1,210 | 1,210 |

Source: Own Calculations

| | | |
|---------------------------------------|-----------|-----------|
| Total marginal income of the section: | 26,630.00 | 26,630.00 |
| Operating expenses: | 26,200.00 | 26,200.00 |
| Profit: | 430.00 | 430.00 |

Table 13. Estimated Acceptance of the Offer for the Product Chicken Breast Sausages

| Product name | Price/kg lei | FVC lei | Marginal income per unit (lei) | Time of use of constraint (minutes) | Marginal income during the period of constraint (lei/minute) |
|-------------------------|--------------|---------|--------------------------------|-------------------------------------|--|
| Chicken breast sausages | 13.21 | 11.30 | 1.91 | 15 | 0.12 |
| Pork sausages | 14.17 | 8.34 | 5.83 | 15 | 0.38 |
| Polish sausage | 13.59 | 7.6 | 5.99 | 20 | 0.29 |
| Polish chicken sausages | 13.83 | 6.2 | 7.63 | 20 | 0.38 |
| Chicken breast parizer | 15.62 | 8.23 | 7.39 | 18 | 0.41 |
| Pork parizer | 15.04 | 7.2 | 7.84 | 20 | 0.39 |
| Peasant parizer | 16.23 | 8.11 | 8.12 | 19 | 0.42 |
| Homemade pork drum | 16.71 | 7.22 | 9.49 | 20 | 0.47 |
| Leber | 4.21 | 2.01 | 2.2 | 13 | 0.16 |

Source: Own Calculations

In addition, the production of all the demand for chicken breast sausage products will no longer allow other more profitable products to be produced because the constrained resource is loaded. The quantity of leber products cannot be manufactured entirely because constrained resources are required.

From table number no. 13, we find that the profit difference is worth 1,189.45 lei. The increase in volume does not compensate for any reduction in the price.

The economic entity must take into account the marketing aspects of such a decision.

Table 14 shows us that the acceptance of the proposal will decrease the profitability of the economic entity, for the period considered.

Table 14. Consequences of Accepting the Offer

| Product | Demand forecast (kg) | Maximum mix of marginal income (kg) | Sales mix (kg) | Cumulative use time of constraint (%) | | Marginal income during the constraint period | |
|-------------------------|----------------------|-------------------------------------|----------------|---------------------------------------|-------|--|----------|
| | | | | | | | |
| Chicken breast sausages | 1,105 | 850 | 1,105 | 15.88 | 20.65 | 6,434.5 | 8,364.85 |
| Pork sausages | 661 | 661 | 661 | 28.23 | 33.00 | 3,853.63 | 3,853.63 |
| Polish sausage | 400 | 400 | 340 | 38.19 | 41.47 | 2,396.00 | 2,036.6 |
| Polish chicken sausages | 400 | 400 | 350 | 48.15 | 50.19 | 3,052 | 2,670.5 |
| Chicken breast parizer | 520 | 520 | 520 | 59.81 | 61.85 | 3,842.8 | 3,842.8 |
| Pork parizer | 300 | 300 | 300 | 67.28 | 69.32 | 2,352 | 2,352 |
| Peasant parizer | 750 | 750 | 750 | 85.03 | 87.07 | 6,090 | 6,090 |
| Homemade pork drum | 404 | 404 | 404 | 95.09 | 97.13 | 3,833.96 | 3,833.96 |
| Leber | 550 | 150 | 150 | 100 | 100 | 330 | 330 |

Source: Own Calculations

| | | |
|---------------------------------------|-----------|------------|
| Total marginal income of the section: | 32,184.89 | 33,374.34 |
| Operating expenses: | 26,700.00 | 26,700.00 |
| Profit: | 5,484.89 | 6,674.34 |
| Profit difference: | | (1,189.45) |
| Investment: | 90,000.00 | 90,000.00 |
| Annual ROI: | 73.13% | 88.99% |

III. The third analysis - Purchase of new equipment to reduce the operating expenses:

The design office and the procurement department are considering the idea of buying a new piece of equipment (4 lei more) that will allow the elimination of internal operations.

The eliminated operations will allow the reduction of operational expenses by 2,000 lei.

Table 15. Estimation of the Purchase of a New Equipment

| Product name | Price/kg lei | FVC lei | Marginal income per unit (lei) | Time of use of constraint (minutes) | Marginal income during the period of constraint (lei/minute) |
|-------------------------|--------------|---------|--------------------------------|-------------------------------------|--|
| Chicken breast sausages | 13,21 | 11,30 | 1,91 | 15 | 0,12 |
| Pork sausages | 14,17 | 8,34 | 5,83 | 15 | 0,38 |
| Polish sausage | 13,59 | 7,6 | 5,99 | 20 | 0,29 |
| Polish chicken sausages | 13,83 | 6,2 | 7,63 | 20 | 0,38 |
| Chicken breast parizer | 15,62 | 8,23 | 7,39 | 18 | 0,41 |
| Pork parizer | 15,04 | 7,2 | 7,84 | 20 | 0,39 |
| Peasant parizer | 16,23 | 8,11 | 8,12 | 19 | 0,42 |
| Homemade pork drum | 16,71 | 11,22 | 4,49 | 20 | 0,22 |
| Leber | 4,21 | 2,01 | 2,2 | 13 | 0,16 |

Source: Own Calculations

From table number 15, it results that the homemade drum product keeps the same position even if the marginal income generated per minute of using the constraint decreases by 0.25 lei.

Table 16. Consequence of Buying New Equipment

| Product | Demand forecast (kg) | Maximum mix of marginal income (kg) | Sales mix (kg) | Cumulative use time of constraint (%) | | Marginal income during the constraint period | |
|-------------------------|----------------------|-------------------------------------|----------------|---------------------------------------|-------|--|----------|
| Chicken breast sausages | 850 | 850 | 850 | 15.88 | 15.88 | 6,434.5 | 6,434.5 |
| Pork sausages | 661 | 661 | 661 | 28.23 | 28.23 | 3,853.63 | 3,853.63 |
| Polish sausage | 400 | 400 | 340 | 38.19 | 36.7 | 2,396.00 | 2,036.6 |
| Polish chicken sausages | 400 | 400 | 350 | 48.15 | 45.42 | 3,052 | 2,670.5 |
| Chicken breast parizer | 520 | 520 | 520 | 59.81 | 57.08 | 3,842.8 | 3,842.8 |
| Pork parizer | 300 | 300 | 300 | 67.28 | 64.55 | 2,352 | 2,352 |
| Peasant parizer | 750 | 750 | 750 | 85.03 | 82.3 | 6,090 | 6,090 |
| Homemade pork drum | 600 | 500 | 500 | 87.82 | 85.09 | 1,813.96 | 1,813.96 |
| Leber | 550 | 550 | 200 | 89.32 | 85.63 | 1,210 | 440 |

Source: Own Calculations

| | | |
|---------------------------------------|-----------|-----------|
| Total marginal income of the section: | 31,044.89 | 23,987.39 |
| Operating expenses: | 26,200.00 | 26,200.00 |
| Profit: | 4,844.89 | 2,212.61 |
| Investment: | 90,000.00 | 90,000.00 |
| Annual ROI: | 64.59% | 29.50% |

From table 16 results that the profit difference is 2,623.28 lei. The idea is favourable to the objective of the economic entity.

8. Conclusions

A solution to the past has become a problem of the present, due to the disadvantages of traditional management accounting.

Therefore, synchronized management accounting in terms of methods, tools and techniques used becomes an essential vector for the implementation of a new decision-making information system in economic entities.

The assumptions of synchronized management accounting are fundamentally different. Product costs are not calculated, there is no allocation key, costs are not directly related to quantifiable variables and, in particular, the sum of the local optimum is not equal to the global optimum. The use of synchronized management accounting shows that an economic entity is a body for which a system composed of local optimum is a very inefficient system.

The implementation of a decision-making information system through the use of synchronized accounting in the economic entities of meat industrialization, is achieved only by respecting a balance of expenditures and by carrying out a very well prepared transition process.

By using synchronized management accounting it was possible to eliminate the dysfunctions noted throughout the value chain. The use of these new methodologies specific to management accounting implies a **paradigm shift**. From our point of view, synchronized management accounting will result in a new revolution due to the specific tools, techniques and methods used.

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