PROGRAMME BOARD


DRAFTING COMMITTEE


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APPLICATION OF SYSTEMATIC COST ACCOUNTING IN THE MANAGEMENT OF SELECTED MIDDLE AND BIG ENTERPRISES

Introduction

Operating under conditions of uncertainty and risk, as well as the need to comply with the conditions posed by a dynamic environment, means that the management of a business entity should have the right tools and instruments to make the right decisions. Accounting is an essential element of the broadly defined enterprise information system, of which cost accounting is a subsystem. Taking into account the fact that cost accounting is an integral part of accounting, in traditional terms, it focuses on costs which are the fundamental element determining the profitability of an economic entity, and its main areas of operation are:

- measurement and valuation of costs related to the use of production factors,
- demonstrating through documentation the process of modifying inputs,
- classification of costs according to different criteria,
- showing cost information in reports (Świderski 2011, p. 5).

In successive stages of evolution, cost accounting has expanded its area with new forms of measurement and the scope of activity and time horizon and has thus embraced the tasks that management accounting performs (Świderski 2011, p. 5).

Regardless of the cost accounting model operating in a company, the task of each is to develop and communicate cost information to users so that companies can function properly and efficiently. Thus, cost accounting is a vital tool in the business management process (Nowak 2005, pp. 21-22).
The research aimed to identify ways and areas of use of systematic costing in selected medium and large companies. To achieve the main objective, we formulated the following specific objectives:

1) Identify the organisation and operation of systematic cost accounting.
2) Identify areas of use of systematic costing in the companies surveyed.

The following research hypotheses were formulated:

1) Systematic costing is often used to prepare financial statements and determine financial performance.
2) The information generated by cost accounting systems is most often used by managers (executives) to control the activities of their subordinate organisational unit.

Two survey questionnaires were developed for the study, one addressed to chief accountants and the other to managers. The questionnaires were addressed to 21 medium-sized and large enterprises operating in the Warmian-Masurian Voivodeship, of which 8 entities took part in the study. Therefore, the research conclusions refer only to the entities included in the survey. We received 8 questionnaires from chief accountants and 24 from managers at various levels.

**Concept, functions and tasks of cost accounting**

Cost accounting emerged in the practice of business units during the industrial revolution. Its main task was to prepare information on the actual complete unit cost of products, which was crucial in business management at the time (Sobanska 2010, p. 207). From then on, the dynamic development of cost accounting began, generating its various models and varieties (Nowak 2015a, p. 163). Cost accounting is thus certainly one of the most critical areas of accounting, and its importance is constantly growing (Nowak 2015b, p. 276). Many authors (e.g. A. Jarugowa, S. Sojak, I. Sobanska, E. Nowak et al.) define cost accounting as a system. According to A. Jarugowa (2002, p. 8), cost accounting includes "the study (identification, measurement) and transformation, according to the adopted model, of information on the costs of an entity's activities, serving the user to assess the situation, make economic decisions and control their implementation (planning and control), as well as valuing inventories and measuring profit". S. Sojak (2003, p. 32) defines cost accounting as "a system of identifying, measuring and processing cost information for financial accounting (according to reporting requirements) and management accounting (according to the needs of management processes)".

The approaches to cost accounting presented highlight different aspects. Nevertheless, the essential elements that characterise modern cost accounting can be distinguished:
• The object of cost accounting is considered to be the costs associated with carrying out business activities, requiring the involvement of specific human and material and financial resources,
• The primary purpose of cost accounting is considered to be to provide the recipients with the economic information they need to assess the performance of the enterprise and to make sound economic decisions,
• The cost accounting system is used to process the information on the value of an economic unit's consumption of resources due to its activities,
• The set of information concerning the costs of an economic entity's activities is created according to rules that consider the recipients' information needs from cost accounting (Nowak, Wierzbinski 2010, p. 15).

The rapid economic changes stimulate the continuous development of cost accounting and, consequently, affect the functions and tasks it is supposed to perform in modern enterprises. The tasks and functions of cost accounting are determined by the information needed at a given time and the people or entities who require it (Prewysz-Kwinto 2010, p. 18). The main tasks of cost accounting can be considered (Gabrusewicz et al. 1998, p. 77; Nowak, Wierzbinski 2010, pp. 16-17):
1) Identifying costs incurred in various categories and over a fixed period. It is also essential to identify where they were incurred, for what, and their amount.
2) Creating pricing rules.
3) Monitoring of the business unit's processes and the amount of costs incurred.
4) Transmission of relevant data for the preparation of mandatory financial reports.
5) To provide specific financial information about the costs of a company's activities that is essential for its management. Thus, cost accounting is aimed at providing information that enables managers to carry out the following essential tasks:
• making price calculations,
• control of the functioning of the unit,
• assessing the profitability of the business,
• economic decision-making.

From the considerations presented, cost accounting plays a dual role in an economic entity. Firstly, it collects and organises the information necessary to prepare financial statements, and secondly, it provides accurate, valuable information in the management of the business unit (Trzcińska 2012, p. 25).

The essential functions of cost accounting, derived from its tasks, can include:
1) The information function is considered the most general function of cost accounting. It consists of producing cost information that is tailored to the needs of the recipients in such a way that an opinion can be formed and appropriate decisions can be made. Cost accounting takes into account the needs of internal
and external information users. Given this division of users, one can specify the following:
• an internal information function that, in the form of reports and statements, provides the cost information needed to manage the business unit at different levels of the company's organisational hierarchy,
• external information function, providing information to specific entities from the company's external environment to assess the company's financial position (Nowak 2005, pp. 19-20).

2) The control function consists of providing information to various actors to assess the level of implementation of established tasks and formulating valuable conclusions for the future (Ossowski 2004, p. 14).

3) The recording function is related to documenting the consumption of the enterprise's property resources and human labour and recording the results of economic events related to the use of the resources concerned (Ossowski 2004, p. 13).

4) The classification function involves making accounting entries on the relevant accounts designated in the company chart of accounts. These entries are related to business operations that concern costs (Nowak 2005, p. 20).

5) The record-keeping function, which consists of recording cost data and results in various cross-sections and database creation (Sawicki 1996, p. 37).

6) The reporting function is linked to the end result of the process of modifying information in the accounting system, i.e. the production of reports and financial and statistical statements adapted to the needs of internal and external users (Nowak 2005, p. 20).

7) Evidentiary function, based on the use of records, as well as accounting documents providing reliable evidence during court and tax proceedings (Sojak 2012, p. 25).

8) The motivational function consists of providing cost information to create a model of evaluation metrics and incentives for accountability centres to better commit to the performance of established goals and tasks (Nowak 2005, p. 21).

9) The analytical function, which consists in using the data contained in the in the reports and the accounting recording system to assess the company's activities and formulate conclusions that allow optimal decisions to improve operating efficiency in subsequent cycles (Sojak 2012, p. 25).

10) An optimisation function supports the selection of optimal courses of action by providing information depicting various scenario events that may occur in a company (Ossowski 2004, p. 14).

Not all the functions described are necessarily present in companies. Their appearance may depend on the scope and detail of cost accounting. Thus, company managers may focus more on selected cost accounting functions, while others may take less interest or ignore them altogether (Prewysz-Kwinto 2010, p. 20).
Systematic costing

Cost accounting for an enterprise, as a core element of management accounting and financial accounting, covers the following:

• systematic costing,
• problematic cost accounting (Rogowska 2013, p. 335).

The systematic cost account is part of the accounting recording system and is maintained continuously (Nowak 2005, p. 23; Nowak 2014, p. 112). Thus, this account must conform to the guidelines of mandatory external reporting and sometimes to the internal requirements of business management (Nowak, Wierzbinski 2010, p. 19).

The primary purpose of systematic cost accounting is to provide the various audiences with the information they need to:

• product costing,
• valuation of product stocks,
• determination of financial performance and
• performance evaluation (Kowalewski 2015, p. 224).

Thus, this account conveys cost and performance information that allows it to be presented in the form:

• external financial statements: balance sheet, income statement and cash flow statement, as well as notes,
• internal reports, useful to managers working at different levels of management (Rogowska 2013, p. 336).

Systematic cost accounting processes information according to specific procedures and rules. The general accounting procedures include documenting, valuing, recording and registering business operations and taking stock of the elements of property resources. In connection with the obligatory maintenance of a systematic cost account, it is necessary to consider the main accounting principles: going concern, accrual, commensurability of costs and revenues, prudence, continuity, materiality, non-compensation, comparability, as well as the principle of periodisation. When conducting this cost accounting for the internal needs of an economic entity, there is no obligation to comply with the mentioned principles (Czubakowska et al. 2014, pp. 109-110).

Problem-based cost accounting is also referred to as non-record cost accounting. They facilitate the solution of information, decision-making and control problems occurring in a company. The essence of these accounts is their usefulness in the management process. Therefore, mathematical, statistical and econometric methods, such as network or value analysis (Sawicki 1996, p. 30), are used in problem cost accounting.
Characteristics of the entities surveyed

The subjects of the research are selected medium-sized and large enterprises from the Warmińsko-Mazurskie Voivodeship. The qualification of a given economic unit to a particular group of enterprises depends on two factors:

- number of employees,
- net revenue from sales or total assets of the balance sheet.

According to the Entrepreneurs’ Law of 6 March 2018. (Article 7(1)), a medium-sized entrepreneur is defined as 'an entrepreneur who, in at least one of the last two financial years:

- employed on average less than 250 employees per year and
- achieved an annual net turnover from the sale of goods, products and services and financial operations not exceeding the equivalent in zloty of 50 million euro, or the total assets of its balance sheet prepared as at the end of one of these years did not exceed the equivalent in zloty of 43 million euro".

The regulations do not include a definition of a large enterprise. However, to use the provisions on the Single Audit File (SPF), the status of an enterprise must be determined based on the regulations found in the Act, which includes a definition of a medium-sized enterprise. Considering this document, a large enterprise is an entity that does not meet the guidelines defining a medium entrepreneur, i.e. the limits are exceeded. Thus, an entity employing a minimum of 250 people and having net revenues of more than EUR 50 million or having total assets exceeding EUR 43 million per year can be considered a prominent entrepreneur\(^1\).

Functioning and use of systematic cost accounting in the entities studied

Table 1 juxtaposes systematic cost information with selected characteristics of the companies surveyed.

Systematic cost accounting, capturing costs on an ongoing basis, provide information that companies use to:

- costing of products and provision of services - 4 business units,
- product stock valuation - 3 business units,
- financial performance determinations - 5 business units,
- preparation of financial statements - 4 business units,
- performance evaluations - 5 business units,
- activity control - 3 business units,
- economic decision-making - 5 business units.

\(^{1}\) http://www.vademecumpodatnika.pl/artykul_narzedziowa,795,0,12199,kto-jest-duzym-przedsiebiorca.html
As seen from Table 1, all companies employing 50-100 people prepare costing of the production of products and the provision of services. In addition, they use systematic costing information to a lesser extent to determine financial performance, prepare reports, evaluate business results and make economic decisions. All companies with over 250 employees use this information to determine financial performance and make economic decisions.

Table 1. Ways of using systematic costing information according to the characteristics of the entities surveyed (number of indications*)

<table>
<thead>
<tr>
<th>Characteristics of the surveyed enterprises</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Calculation of costs of manufacturing products and providing services</td>
</tr>
<tr>
<td>Number of employees</td>
<td></td>
</tr>
<tr>
<td>50 - 100</td>
<td>2</td>
</tr>
<tr>
<td>101 - 250</td>
<td>4</td>
</tr>
<tr>
<td>Over 250</td>
<td>2</td>
</tr>
<tr>
<td>Legal form</td>
<td></td>
</tr>
<tr>
<td>Public limited company</td>
<td>3</td>
</tr>
<tr>
<td>Limited liability company</td>
<td>5</td>
</tr>
<tr>
<td>Type of activity</td>
<td></td>
</tr>
<tr>
<td>Production</td>
<td>5</td>
</tr>
<tr>
<td>Communal</td>
<td>3</td>
</tr>
</tbody>
</table>

* - respondents could select more than one answer

Source: own elaboration

The research also shows no tendency in joint-stock or limited liability companies to use a particular way of applying the information generated by systematic cost accounting. Nor can this be established in enterprises engaged in manufacturing. All business units with a municipal profile use the information received from this cost account to assess the results of the enterprise. The other ways shown in Table 1 are also used by these enterprises, but not by all of them.

Based on the survey, it can be concluded that the hypothesis that the systematic cost account is most often used to prepare financial statements and to determine financial results has been partially verified positively. Companies also use information from this cost account (same number of responses) to determine the financial result and to make economic decisions.
The research shows that most businesses (5) use outcome calculation. Slightly fewer (4 companies) use preset calculation. The commissioned bottom-up calculation is the least frequent (only in one company among those surveyed). At the same level of use is the simple divisional calculation.

When asked about the variant of records used in the surveyed business units, all respondents answered similarly, namely that they use the extended variant based on sets of accounts 4 and 5. This type of record is recommended mainly for large enterprises, not only because of their size but also because of the type of business conducted. However, the research shows that the extended variant of records is also used by medium-sized enterprises, which may be related to the fact that this type of record provides the most information, above all, on the type structure of costs and the costs incurred by individual responsibility centres. In addition, this variant makes it possible to draw up a calculation account or allows a free choice of how to determine the financial result. The costing system is distinguished by its more excellent suitability for analytical tasks than the by-type system since it links costs to the production volume. Direct costs are usually variable, depending on the production volume, while indirect costs are relatively considered fixed costs depending mainly on time but not production volume. Analysing costs using the costing system makes examining the relationship between direct and indirect costs possible.

In order to further analyse indirect costs, how they are accounted for in the surveyed companies was examined. These costs are allocated to individual groups of indirect costs, namely departmental, management, selling, or purchasing costs. Different allocation keys can be assigned to each of these groups, but this must be done according to the guidelines presented in their characteristics (Matuszek et al. 2011, p. 94).

The most frequently used allocation keys for departmental costs (indirect production costs) in the surveyed enterprises are: direct wages (3 units) and the number of person-hours worked (3 units). However, the enterprises also declared that they use the following as an allocation key for these costs: direct wages including surcharges (1 unit), working time of machines (2 units), power of installed machines and equipment (2 units), the number of natural resources used (1 unit), and value of materials used (1 unit). One company indicated that it uses a different accounting key for departmental costs.

The research also shows that not all surveyed companies account for every group of indirect costs. Such units include two municipal companies, one of which only accounts for management costs, while the other unit accounts for departmental, management and purchasing costs but does not account for selling costs.

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2 http://www.czasopismaksiegowych.gofin.pl/11,3217,160983,rodzaje-ewidencji-kosztow-podstawowej-dzialalnosci.html
In order to investigate the areas of use of cost accounting systems by managers in the companies surveyed, a questionnaire was developed for employees in managerial positions. Twenty-four people took part in this survey (Figure 1). All respondents who took part in completing the questionnaires confirmed that in their work, they use the information generated by the systematic cost accounting operating in the company.

The usefulness of the cost accounting used in the company was rated very well by three directors, six heads of department/division and two management board members (11 respondents in total). The most significant number of respondents (13) rated the cost account functioning in the unit well. Seven departments (division) managers gave this answer, three team (section) managers and one director. The remainder of the respondents (2 respondents) do not have an opinion on the usefulness of the cost accounting used in the enterprise.

Of the 24 respondents, as many as 21 indicated that they obtain information from the systematic cost accounting operating in the company in the form of periodic reports and cost and performance analyses (monthly, quarterly, annual) in an established format. This group can be distinguished: 4 directors, 13 department managers, 2 team leaders, and two board members. By analysing the results, it can be concluded that the only form through which all board members and team leaders participating in the surveys obtain information is this form. They use the other methods less frequently. 6 respondents (2 directors and 4 department managers) use information from the profit and loss account, while cost accounting sheets are used by only three department managers and two by costing.

Managers use the information obtained from systematic cost accounting in various ways. The most significant number of respondents indicated that they use such information to control the activities of their subordinate organisational unit (centre
of responsibility). Eighteen respondents answered this way: three directors, 12 department heads, two team leaders and one board member. Respondents also declared that they use this information to:

- resource planning - 13 respondents: Four directors, nine heads of department,
- Resource cost assessments - 3 respondents: 1 director, 1 department head, 1 board member,
- solving short-term decision-making problems - 2 respondents: 2 department managers,
- assessing the achievement of the objectives set for their subordinate organisational unit - 7 respondents: 1 director, 5 heads of department, 1 team leader
- Motivating subordinates - 10 respondents: 2 directors, 7 heads of department, 1 team leader.

**Summary and conclusions**

Although the main task of systematic cost accounting is to interact with financial accounting and reporting, it also offers valuable information in diagnosing and solving many decision-making problems. The following conclusions were drawn based on the research conducted:

1) Information from systematic cost accounting is used in medium-sized companies mainly to assess business results, while in large companies, it is used to determine financial performance and make economic decisions.

2) In recording operating expenses, the entities surveyed use the extended variant based on sets of accounts 4 and 5. The majority of the entities use pre-calculation and outcome calculation.

3) Most managers obtain information from systematic cost accounting through periodic reports and cost and performance analyses (monthly, quarterly, annual) in a fixed format. With the information they receive, they can control the activities of their subordinate organisational unit, plan resource acquisition or motivate subordinates. They use information from the profit and loss account and cost accounting sheets less frequently.

In conclusion, it can be said that systematic cost accounting plays a vital role in the entities studied by offering helpful information to managers at different levels of management in an appropriate form and time.

**References**

Abstract

The research aimed to identify the ways and areas in which systematic cost accounting is used in selected medium and large companies. Two survey questionnaires were developed, one addressed to chief accountants and the other to managers. The questionnaires were addressed to 21 medium and large enterprises operating in the Warmian-Masurian Voivodeship, of which 8 entities participated in the study. Therefore, the research conclusions refer only to the entities included in
the survey. We received 8 questionnaires completed by chief accountants and 24 completed by
managers at various levels.

The research found that information from systematic cost accounting is used in medium-
sized enterprises mainly to assess the results of operations, while in large enterprises, it is used to
determine financial results and make economic decisions. In recording operating costs, the surveyed
entities use the extended variant based on sets of accounts 4 and 5. The majority of the entities use
pre-calculation and result calculation. In an established format, most managers obtain information
from systematic cost accounting through periodic reports and cost and performance analyses
(monthly, quarterly, annual). With the information they receive, they can control the activities of
their subordinate organisational unit, plan resource acquisition or motivate subordinates. They use
information from the profit and loss account and cost accounting sheets less frequently.

In conclusion, it can be said that systematic cost accounting plays a vital role in the entities
studied by offering helpful information to managers at different levels of management in an
appropriate form and time.

**Keywords:** costing, systematic costing, cost accounting, medium-sized enterprises

*JEL Classification:* M00, J24, J43, P46