

# Managerial accounting as a source of information for product cost management in managerial information systems

## *Manažérske účtovníctvo ako zdroj informácií pre riadenie výrobných nákladov v manažérskych informačných systémoch*

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**Abstract:** This paper is focused on: (1) Managerial accounting analysis as a source of information provided for product costs management (mainly from the point of view of exploitation of budgeting and costing in selected companies in agriculture), (2) Possibilities of integration and information processing for product cost management, provided by managerial accounting in the framework of managerial information system of the company.

**Key words:** product cost management, managerial accounting, costing, budgets, managerial information systems

**Abstrakt:** Príspevok je zameraný na analýzu manažérskeho účtovníctva ako zdroja poskytovania informácií pre riadenie výrobných nákladov (najmä z hľadiska využívania a objektívnosti zostavovania kalkulácií a rozpočtov v skúmaných podnikoch agrokomplexu) a na možnosti následného začlenenia a spracovania informácií pre riadenie výrobných nákladov, poskytovaných manažérskym informačným účtovníctvom, v rámci manažérskeho informačného systému podniku.

**Kľúčové slová:** riadenie výrobných nákladov, manažérske účtovníctvo, kalkulácie, rozpočty, manažérske informačné systémy

### INTRODUCTION

Competitive environment in the current market oriented conditions prevents companies to develop new and first class products, which fulfil strict technical, ecological and economic criteria for providing variability and rapid modification. To maintain these criteria, it is important to evaluate economic efficiency in product assortment and their impact on costs, revenues, profit as well as efficiency and productivity indicators. Decision making tasks measuring economic impacts of certain product introduction should be solved in the preparatory phases before the production.

Firms need operational, tactical and strategic information for product cost management to succeed in competitive environment. Managerial accounting is their source, which provides information for processing and utilisation to the firm's managerial information system.

Effective system of information in managerial accounting expects complex interconnection of information for in-plant value management in three basic areas, as assumes Fibrová (2001):

1. Information interconnection of value management with real process course management.
2. Information interconnection of value management with competition analysis of the internal production possibilities of the company.

3. Information interconnection for operational, tactical and strategic planning.

Mackevicius and Poskaite (1998) describe the indicators suitable for competitive environment and production facilities analysis of the firm.

Tumpach (2001) mentions the role of the International Accounting Standards on managerial accounting as an information source for in-plant management.

Latečková (2002) also describes the role of managerial information system in the in-plant management. Her paper shows that information needed for product cost management plays an inevitable role in managerial information systems.

The aim of our paper is:

- to analyse information for product cost management provided by managerial accounting
- to show possibilities of their sequential incorporation and processing in the framework of managerial information system of the company.

### MATERIAL AND METHODS

This paper used the results of research conducted at the Department of Information Systems and Finance, Slovak Agricultural University, from the area of improvement in information systems of agricultural companies in mar-

ket economy conditions and development of costing information system.

During the data set collection, analytical and synthetic methods were used. Also comparative study, selection method and interviews were held.

## RESULTS AND DISCUSSION

It is very difficult to receive relevant information from financial accounting to manage efficiency and effectiveness of output. Their source is the managerial accounting of the company. Information from managerial accounting helps management to control processes, to compare real values with plan, to anticipate future development and to evaluate accuracy of accepted decisions.

Managerial accounting has a task to create a suitable system of information for in-plant value management of concrete processes. Only concrete and value integration of output allows judging their utility and necessity of changes. Also it is important to integrate information for operational, tactical and strategic management in managerial accounting. To achieve the long-term prosperity, strategic management of innovations is a necessity, also market share, technological changes etc. and their implementation in operational management. On the other hand, the quality of operative management influences financial efficiency of the company in the future.

Costing and budgeting belong to the basic information tools for effectivity and efficiency management of outputs. Important role is given to in-plant prices and structuralised in-plant reports. Managerial accounting should be kept in such a way that management information tools of product costs must be ready on time and unbiased.

Importance of information for product cost management is enforced in the International Accounting Standards. Direct connection to internal information systems including budgeting and internal reporting are in the account classification framework for closing accounts, in IAS 1 – Presentation of financial statements, IAS 11 – Accounting for construction contracts, IAS 14 – Reporting financial information by segment, IAS 18 – Revenue recognition, IAS 36 – Impairment of assets.

Cost quantification in connection to output of the company and importance of pricing is described in IAS 2 – Valuation and Presentation of Inventories in the Context of the Historical Cost System, IAS 4 – Depreciation accounting, IAS 11 – Construction contracts, IAS 14 – Segment reporting, IAS 16 – Property, plant and equipment, IAS 18 – Revenue recognition, IAS 23 – Borrowing costs, IAS 24 – Related party disclosures, IAS 38 – Intangible assets, IAS 41 – Agriculture.

Economic effects quantification connected to individual outputs are in: IAS 14 – Segment reporting, IAS 35 – Discontinuing operations, IAS 36 – Impairments of assets.

The next part of the paper shows the results of the analysis of costing and budgeting in the selected agricultural companies.

There are still reserves in exploitations of costing for the effectivity and efficiency management and long prosperity of the agricultural companies. These reserves are quite huge in primary agricultural companies and smaller in agri-food processing companies. There are still agricultural firms, which do not deal with costing. Some companies compile final costing, but the results are not used in management. Some agri-food processing companies with foreign property use non-traditional methods of costing, mainly costing of variable costs and hardly ever activity based costing.

There are several factors, which influence unbiasedness of costing and success of their employment in decision-making and management. Based on our research, we can assume that the above-mentioned factors are:

- correctness of matching direct and overhead costs to outputs (to product, labour or service),
- connection of expenditures side to costing with regards valid accounting, tax and price legislation,
- knowledge of classical and non-traditional ways of costing in the process of solving different managerial tasks,
- selection of suitable software for costing.

In the process of matching direct and overhead costs, we determined the following reserves:

- some costs, which we can match directly to the output, are ranked among overhead costs,
- overhead costs are often connected with only one output and are ignored,
- the value of different overheads is not always settled, because the production overhead consists of costs which should be in other overheads and administrative overhead is not always calculated based on current valid accounting legislation,
- pricing of in-plant services is very problematic, in some cases they were excluded from costing,
- entries correcting expenditures and revenues are not always precisely determined,
- overhead cost scheduling uses schedule bases, which nowadays are not valid and do not activate their origin (the most of the cases uses direct wages and direct costs).

It is important to realise in formulating expenditures costing that different requirements are imposed by accounting, taxation and price legislation. Because of this, in income tax calculation, sale price determination it is needed to check each accounting cost, whether is it a tax recognised expenditure or legitimate. Costing accountant should pay attention to this matter because of the impact on profit and loss statement as well as the value of income tax.

Agricultural companies prepare costing based on classical costing formula adjusted for concrete conditions, so called absorption costing. These classical costing methods used with the above mentioned mistakes are used by managers at all levels. It is known that in several decision-making tasks, classical costing methods can lead to a wrong decisions.

In connection to accession of Slovakia to the EU, it is important to widen the scope of the management in the

area of non-traditional methods of costing. Attention should be paid to:

- Costing of variable costs through direct costing, which should be utilised if there is a change in the structure of the production with regard to the existing capacity, in the process of price tactics on the market, in budgeting profit which should approximate to cash flow and so on;
- Activity based costing, which can be used to avoid a lot of inaccuracy which exists in compiling classical costing and those, which were introduced as reserves in the allocation of direct and overhead costs to the output;
- Retrograde costing, which helps to identify the influence of internal and external factors on profitability of the realised output.

Most of the companies in agriculture use automated costing. Results of automated processing of final costing are adjusted manually, because some of the entries, especially overhead costs, do not reflect the reality. Users do not know the cause of the mistake and they do not know how the software operates. Because of this fact, it is important to pay attention to the software selection and co-operation with the software company.

Information tool for cost management are budgets. Their meaning is in determining overhead costs of centres, which are transferred to through costing and recomputed for individual outputs (products, labour and services). Preliminary costing consists of direct and overhead costs and they are foundation of in-plant price determination.

Overhead costs rise up in connection to company outputs as a non-homogeneous entity. In spite of this, it is necessary to add them to output. Before it, it is needed to determine overhead costs based on individual centres or activities. This step is an inevitable intermediate for specifying overhead costs for outputs and allow us to control and assess efficiency of individual outputs.

To set up budgets, which could be used for checking efficiency of centres and outputs, is a difficult task especially in agricultural production. Biological character of agricultural production and its determination with natural conditions causes that despite of exact methods or determining limits in budgeting we have to use intuitive approach – estimation. We think that agricultural companies should not avoid budgeting, because:

- The main task of budgeting is not only in task definition, which should be fulfilled but in restriction of uncertainty in decision making and thus increasing efficiency of decision processes. Analysis of future complications should be realised and evaluation of solution alternatives, what leads to entrepreneurial activity optimisation and risk elimination. Short term budgeting can be used in product cost management, where uncertainty is not as big. Short-term budgets could be a good tool for operational plan implementation in production and tool for liquidity management.

Information for product cost management should be a part of a managerial information system of the company.

Source of the managerial information system is managerial accounting.

Information system development in last years have shown several shortages, which managers experience in their companies. The solution from this situation is to integrate information systems to complex managerial information system. The main role is given to system integration, which comprises:

- data integration, setting up and usage of common data base,
- technological integration, where a united system of hardware and software tools through independence of the application software from operational systems and technical accessories,
- methodological integration, that is a creation and exploitation of common methods for information system development.

Managerial information systems more and more use data warehouses, which help in decision-making. Managerial information systems, which use data warehouses, are called Business Intelligence. Data warehouse building is not an easy task. There are several ways, from which two main trends were evolved. It will be important to have a summary of these ways, because software companies bring products to the market, which use one of the two concepts.

Data warehouse or data mart building can contribute to mathematical and analytical methods implementation. It is not important for the manager how the data are collected from the information system sources. The basic difference is that managers do not use spreadsheet processors but instruments which allow them to perform business and statistical analysis over the multidimensional information space. This is a way how it is possible to follow and analyse problems in several dimensions based on the needs of business task. Product cost management belongs to multidimensional tasks.

Data warehouse usage brings new chances to managers, which were not possible to realise and management information system alone has not enough tools for creation. One of the reasons is that size of the data in the data warehouse is multiple times bigger than the volume of data stored in classical production information systems. Data warehouse usage, as a competitive advantage, is possible after the realisation of several steps in the data warehouse.

The first step is the integration from the production systems to data warehouse, the second step is the implementation of tools for self-data. The third step is the interpretation of results. The most used data warehouses are from the companies as Sybase, Microsoft, and Aorus. Their characteristics are described by Kučera (2002). Construction of managerial information systems based on data warehouses should be approached as a complex problem which needs individual access based on the needs and possibilities of particular user. The result should be a system, which provides readable, analysed, and available information in real time from companies databases, which can be used for manage-

ment of the firm as a whole as well as its products and services and in-plant units.

The development of information systems and information technologies is so rapid that this fact forced us to make new conceptual approaches for solving the requirements of informatics on the companies, regional and national level. The price of correct information in the competitive environment has an increasing tendency. The graphical interpretation of selected indicators is necessary with changing parameters. This is a way, how to present information about product costs. These opportunities are given by managerial information systems, which secure defining information and fulfil all the requirements and features for future.

## CONCLUSION

Managerial accounting and managerial information systems provides management with broad resources for product cost management. In agricultural practice, managers do not take an advantage of it. The reasons can be a lack of qualified employees in this area, and a lack of financial resources for realisation of other possibilities.

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