MODERN TECHNIQUES OF PRODUCT COSTING AT INDUSTRIAL ENTERPRISES

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An emergence of a global market comes from technological advancement and financial policies that have paved the way for global economic progress. Considering economic globalization an accurate, full, reliable accounting-analytical information on product cost per unit is, apparently, of crucial significance for any enterprise. Only modern methodical-organizational approaches to product costing allow businesses to be better equipped in order to enter a global market and compete in today’s modern world.

The aim of the paper is to examine a set of key shortcomings in the methodical and organizational principles of the cost accounting system at industrial enterprises. It is of crucial importance for identifying the most appropriate and applicable techniques for industrial costing which could be further successfully implemented in industrial production. This research was carried out by employing a rigorous methodology: an extensive body of literature on the subject was critically reviewed to reveal advantages and drawbacks of modern and traditional techniques of costing, respectively. Moreover a comparative study of cost management systems of some huge world-known enterprises was conducted to provide evidence of their relevancy. As a result most effective and efficient techniques of product costing are identified to help to improve the cost management system of any industrial enterprise. They are target costing, activity-based costing and just-in-time approach.

Keywords: activity-based costing, cost accounting system, cost management system, just-in-time approach, target costing, technique of costing.

JEL codes: M11, M41, M1.

Introduction

There is every likelihood that a tightening competition among business entities is at the top of today’s economic agenda. Economic globalization not only opens wide perspectives but also poses an enormous number of challenges. There seems to be a problem of choice of the most efficient technique of product costing in order to improve the cost accounting system at any enterprise. In other words, attention of managers of giant industrial enterprises is focused on an issue of inconsistency between traditional techniques of costing and competitive technologies of modern industrial production.

Considering industrial globalization a variation of any price on industrial product is restrained by a large number of alternative market prices. The only independent variable affecting profit is a value of expenses (costs) incurred. As a result cost managers are undoubtedly engaged in a process of implementation of the most efficient cost management system (CMS). In turn, primary criterion for an increase in efficiency level of CMS is an improving of the current accounting and financial statements system as a function of management, in particular as to cost accounting and product costing.
At the same time scientists rise an issue of working out the rational cost accounting system as well as choosing the most applicable and appropriate techniques of product costing.


R. Kaplan and R. Cooper, who can be undoubtedly called fathers of activity-based costing, have revealed that most companies don't know how to measure accurately, influence, or understand fundamental cost drivers in their businesses. Their works on cost management had a considerable influence on further researches of such Ukrainian scientists as M. Chumachenko and S. Golov who started to put American costing techniques into practice in Europe. Being not rigorously studied an issue of product costing is now of crucial interest among scientific elite in the light of industrial globalization processes.

The object of the study is a set of costing techniques affecting the cost management system of any industrial enterprise.

The aim of the research is a development of applicable recommendations and suggestions concerning an improvement of techniques and organization of manufacturing cost accounting as well as product costing at industrial enterprises.

In order to address the aim of the research the following specific tasks should be fulfilled:

- explore and take issue with some of traditional techniques of industrial costing in order to prove their failure to keep pace with ongoing challenges of economic globalization;
- reveal some key shortcomings in the methodical and organizational principles of the cost management system at industrial enterprises;
- identify the most rational and efficient techniques of product costing at industrial enterprises.

Methodology of the research

This research is carried out involving the following methodology:

- gnoseological method to clarify the economic essence of notions and categories on cost accounting and product costing;
- the method of critical analysis to conduct a comprehensive review of the literature on industrial costing;
- systematic method to design relevant cost models to develop the rigorous cost management system for the purposes of production;
- comparative method to opt for applicable and appropriate techniques of costing as well as to reveal the most glaring shortcomings in the methodical and organizational principles of the cost management system at industrial enterprises.
Results

American scientists suggest that many world-known business entities substantially constrain their expenses on a calculation of product cost in a proper way. There is solid evidence that most companies refrain from development and implementation of alternative costing techniques and efficient cost accounting system. The outcome of such a cost saving is a possession of inaccurate, not full and unreliable accounting-analytical information on product cost per unit. In turn, it becomes impossible to take any adequate management decision such as determination of sale price which could provide a profit desired.

Critical review of the economic-accounting literature points up an existence of four key methodical-organizational shortcomings in approaches to product costing at industrial enterprises (Kwan, 2011):

- underestimation of direct tracing;
- absence of overhead separation into cost pools;
- improper determination of cost drivers;
- blind reliance on a gross margin analysis.

It is necessary to examine each of the above-mentioned shortcomings to shed new light on their nature and origin in order to find out ways of their elimination.

The term direct tracing refers to "the process of identifying and assigning costs to a cost object that are specifically or physically associated with the cost object" (Hansen, 2009, p. 25). Underestimation of direct tracing consists in placement of all costs, requiring additional time and resources for assigning to a specific cost object, into an «overhead» category. Companies are not willing to invest the time and resources in a cost management system that allows for these costs to be interpreted using direct costing. These costs are assigned to the products using singular cost drivers that are not representative of the cost object. By not utilizing direct tracing, companies do not get a sense of the real costs involved in producing a particular product.

Author Ralph Adler states that companies are ignoring the "advances in information technology that have greatly reduced the costs associated with tracking and assigning costs to specific products and services" (Adler, 2009, p. 31). It is worth recalling that from the managerial accounting point of view a concentrated competitive environment calls for substantial investments in order to obtain competitive advantages in future. As a result a possession of relevant information on existing cost objects should be considered as one of primary tasks for cost managers.

Absence of overhead separation into cost pools means that all costs are aggregated into one group. Alder states that the vast majority of companies categorize overhead into one cost pool (Adler, 2009). It facilitates the overhead allocation procedure and product costing. However the information obtained is by far limited, so it can’t be reliable enough for rational managerial decision-making. Management puts all costs that they cannot charge to materials or labor into overhead. This makes it difficult to examine the specific costs that are associated with a particular product. Management is unable to truly see the profitability of a product because the costs are not accurately allocated. These systems do not separate the overhead costs into famili-
iar overhead categories. It is impossible to correctly associate overhead costs with these practices.

Furthermore, traditional cost systems lack efficiency because of inappropriate use of cost allocation bases. Cost management systems utilize cost drivers to allocate costs to products. In traditional cost systems, a functional-based cost accounting approach is used to acquire cost information. In these systems, usually only the cost drivers associated with direct labor hours or machine hours are used to assign overhead costs to products. In reality, though, these are not the only drivers that explain the relationships between the products and the costs associated with them. Adler writes that the use of direct labor to allocate overhead costs is "antiquated and outmoded" (Adler, 2009). He states that in many manufacturing companies, the direct labor costs are only representative of less than 10 percent of the product’s total cost. Thus, it is of noticeable importance to implement up-to-date approaches to industrial costing in order to survive in the dynamic competitive environment (Kwan, 2011).

The final concern from traditional cost systems is the failure to penetrate beyond a gross margin analysis. Many companies ignore the costs of general sales and administrative expenses (e.g. marketing, distribution, or administrative) in the calculation of a product’s costs. This failure stems from the fact that there is no requirement to include these costs from a financial accounting perspective. By ignoring these costs, managers do not recognize the total costs of a product. Companies that hire traveling salespeople to sell their products will accumulate more costs for each unit sold than products sold through brick and mortar stores and catalogs. Although there is a difference in the amount of costs, there will be no recognition in the cost analysis because these costs are ignored. Although it is not required by financial accounting standards, management recognizes the need to allocate these costs into the products. The assignment of these costs helps determine the true cost of a product, and allows for the company to recognize a need to change production levels. A traditional cost system does not provide the true potential for an organization. It is important for companies to understand the shortcomings of traditional cost systems in order to develop an effective cost management system (Kwan, 2011).

Most American scientists are engaged in research of three up-to-date techniques of product costing:

- target costing;
- activity-based costing (ABC);
- just-in-time approach.

The term target cost is the difference between the sales price needed to capture a predetermined market share and the desired per-unit profit (Hansen, 2009). This difference is the allowable cost that managers permit for the cost of the product.

In this process, management must find cost reductions if current costs are higher than the target cost. This ensures that management changes the operations of the entire business in order to achieve such results. Target costing also requires extensive interactions among the production, engineering, R & D, marketing, and accounting departments so that everyone is in sync with the same idea (Kaplan, 1990). This cost management technique helps to reduce costs in each stage of the development of the product. Companies that utilize target costing follow three distinct steps. The first
Step involves planning and designing a product of quality that meets the consumers’ demands. The marketing department researches a need of the customer and develops a product that would be highly anticipated. When the results satisfy management, the project is available for the production stage. In the second step, executives set the target cost for the product. The exact cost is determined by the capabilities of the company and the desired profit that executives desire from the production of the product. The target cost is usually referenced as an allowable cost, which the rest of the company understands to stay within the range. During this stage, the process of value engineering is utilized. Value engineering is a disciplined search for various feasible combinations of resources and methods that will increase product functionality and reduce costs (Kinney, 2006). The target cost that is set by top management is the attainable cost that is required by the production department. The final step is actually attaining the target cost at the production level. Employees attempt to achieve the results through trial and increased volume production. These target costs for products typically set standard costs for the business. It is a way for businesses to maintain relatively low costs levels during production. The target cost is only the initial point of interest for management. With this in mind, the target cost is continuously reduced in an effort to spur a process of continuous improvement in actual production cost (Kinney, 2006). The use of target costing helps businesses to maintain a competitive attitude. It is important to always improve and innovate on current practices and methods. This cost management tool reduces costs across the company, and provides the profit margin that satisfies management. Target costing helps companies achieve global success by continually cutting costs and enhancing the quality of the products (Kwan, 2011).

Activity-based costing consists in use of cost drivers to assign costs to a separate object. An activity-based costing (ABC) system is a cost accounting system that uses both unit and non-unit-based cost drivers to assign costs to cost objects by first tracing costs to activities and then tracing costs from activities to products (Hansen, 2009). All costs, needed to be allocated, are, firstly, segregated into pools on the basis of corresponding activities.

The philosophy behind using activity-based costing is the value that it provides to customers at a cost less than the price customers pay for that value. Thus, managers need to control the sources of value and the drivers of costs in the resource-consuming activities. In activity-based costing, the global competitor continuously attempts to eliminate nonvalue activities and to reduce resources consumed by value-adding activities (Kaplan, 1990).

Unlike target costing ABC was worked out in the early sixties of the 20th century in USA. Theoretical substantiation of the technique was first met in works of R. Cooper and R. Kaplan. The authors stress on the importance of efficient reformation of the cost accounting system in order to successfully implement activity-based costing at any enterprise. This technique is fundamentally described by 5 primary steps:

- identification of cost drivers;
- segregation of costs into cost pools;
- determination of cost allocation bases;
• calculation of cost allocation rates;
• assignment of previously segregated costs to cost objects.

Thus, competitive advantage of the costing technique researched is a transit assignment of costs to corresponding activities. It substantially improves any cost allocation. Actually such a process is referred to as direct tracing which is obviously ignored by a large number of industrial enterprises. It is noteworthy recalling that application of activity-based costing eliminate abovementioned key shortcomings of traditional costing, although ABC could be considered as a complex technique.

Considering tough competition among business entities a destiny of any enterprise directly depends on full, accurate and reliable accounting-analytical information on costs. In most respects implementation of an activity-based costing system is vital to the success of any company that possesses global aspirations.

Although not entirely a cost management tool, the just-in-time approach is important to mention briefly in this paper. Many companies that have adopted effective cost management systems also apply just-in-time approaches in their production. The two philosophies have similarities that have enabled companies to thrive in a global environment. The just-in-time philosophy is the continual pursuit of productivity through the elimination of waste (Hansen, 2009). The primary concern of the just-in-time approach is “supplying a product that is needed, when it is needed, and in the quantity it is needed” (Hansen, 2009, p. 172). It requires an extensive contract with the supplier so that the company knows it will deliver the necessary inventory when asked. In this system, process costing is used to calculate product costs. Work cells are created that monitor products from development to completion. Costs are calculated by cell for the period of time. Overall, the just-in-time philosophy produces an efficient inventory management system. The one requirement for a JIT approach to function properly is the highly efficient coordination of the purchasing, production, and marketing functions (Stefanovich, 2011). It needs all the components of the production process to be reliable or the system loses its efficiency (Kwan, 2011).

GE Company represents a prime example of a company that implemented a new cost management system in order to complement its just-in-time approach. The company began its change in 1980 when it saw the need to change as new competitive pressures approached. The company visited Japanese plants since they were the first to develop the just-in-time technique and utilize other cost management techniques. The organization was among the first to initiate pilot projects to implement just-in-time and computer automation concepts in American plants (Hilton, 2000). As GE developed these new JIT approaches, the company realized that its traditional cost accounting systems did not trace the benefits from the JIT approaches. It was later on that GE began a concerted effort to design performance measures appropriate to manufacturing practices. The company realized that a new cost management system was necessary to calculate costs accurately and continue the success it had from the JIT approach. The organization utilized both techniques to continue to diversify its product line and maintain its profitability. GE understood the need to implement cost management techniques for the future of the company (Kwan, 2011).
Just-in-time approach requires a rigorous analysis of world practice, nevertheless it is suggested to be an adequate alternative to traditional outdated techniques of costing.

Conclusions

1. Industrial globalization processes cause a dynamic strengthening of economic competition. Considering American and Japanese experience outcomes of the research conducted claim that:
   - accurate, full and reliable information on costs is one of crucial factors of enterprise's economic prosperity;
   - it is impossible to come to a managerial decision without improving current accounting and financial statements system as a function of management, in particular as to cost accounting and product costing;
   - traditional costing techniques can't be blindly applied in today's terms;
   - identified techniques of product costing are developed and tested by leaders of world market of goods and services, that's why they are absolutely relevant.

2. There is no doubt that national features of industrial production of different countries sometimes don't allow to completely employ the techniques proposed. Nonetheless, global market rules and international economic tendencies standardize and harmonize production processes as well as methodical-organizational principles of accounting.

3. Up-to-date methodic approaches to product costing should form the basis for subsequent developments of efficient costing techniques at industrial enterprises.

References

ŠIULAIKINIAI PRODUKTŲ SAVIKAINOS NUSTATYMO METODAI PRAMONĖS ĮMONĖSE

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Santrauka

Ekonominės globalizacijos sąlygomis labai svarbi bet kuriai įmonėi tapo tiksliai informuoti apie produkto savikainą. Patikima išlaidų valdymo sistema padeda mažinti gamybos išlaidas, didinti gamybos efektyvumą ir produktų pelningumą. Tik šiuolaikiškas metodinis ir organizacinis požiūris į produktų vieneto gamybos išlaidų nustatymą leidžia įmonėms geriau pasirengti dalyvauti pasaulinėje rinkoje ir konkuruoti moderniame šiandienos pasaulyje. Prieš įdiegdamos veiksmingą išlaidų valdymo sistemą, įmonės turi gerai išanalizuoti tradicinius išlaidų apskaitos metodus. Tai leidžia įmonėms geriau pasiruošti dalyvauti pasaulinėje rinkoje ir konkuruoti moderniame šiandienos pasaulyje. 

Prieš įdiegdamos veiksmingą išlaidų valdymo sistemą, įmonės turi gerai išsiaiškinti ir pašalinti trūkumus įmonės išlaidų valdymo sistemoje. Tik šiuolaikiškas metodinis ir organizacinis požiūris į produktų vieneto gamybos išlaidų nustatymą leidžia įmonėms geriau pasiruošti dalyvauti pasaulinėje rinkoje ir konkuruoti moderniame šiandienos pasaulyje. 


Raktiniai žodžiai: veikla grindžiamas išlaidų apskaičiavimas, sąnaudų apskaitos sistema, sąnaudų valdymo sistema, požiūris „reikiamu laiku“, tikslinis sąnaudų nustatymo būdas, sąnaudų nustatymo technologijos.

JEL kodai: M11, M41, M1.