(Dys)functionality of accounting cost systems in manufacturing companies of Tuzla canton

Puškarević, Sado; Gadžo, Amra

Sado Puškarević
University of Tuzla
Bosnia and Herzegovina
Faculty of Economics
Rudarska 8, Tuzla
sado.puskarevic@untz.ba
Phone: +38761289542

Amra Gadžo
University of Tuzla
Bosnia and Herzegovina
Faculty of Economics
Rudarska 8, Tuzla
amra.gadzo@untz.ba
Phone: +38761289542

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(DYS)FUNCTIONALITY OF ACCOUNTING COST SYSTEMS IN MANUFACTURING COMPANIES OF TUZLA CANTON

Abstract

This paper shows the results of the conducted primary survey on functionality of cost systems in manufacturing companies of Tuzla Canton (hereinafter "TC"). This paper assesses their adequacy to the needs of these companies: the present needs, and the ones that will be brought by the changes in the environment. These systems have to be up-to-date, as they influence the process of cost management, which is the key factor of companies' adaptation to the conditions of a modern market.

Cost management, which is based on the information of a cost system, enables the company to take the adequate stand towards customers on markets and toward their competition. Also, the quality cost information is a precondition for effective and efficient allocation of limited resources in a transitional period of society development. Therefore, only quality designed cost system in transitional economy will enable recovery, and then, growth and development of a company. This emphasizes the importance of research of the stated issues for transitional countries.

The research results should also help to persuade the management about the need to modernize the operation organization, primarily the accounting function, mainly in the part of cost system organization. The determined defects, as well as deviances in relation to current needs for information about costs, are guidelines for an adequate process of redesigning cost systems in companies of transitional economy.

Keywords: evaluation of cost systems, manufacturing companies, transitional economies.

1. *Introduction*

If we consider globalizations flows and opening of national borders for integration into international economic flows, the assessment of functionality and development of cost systems must be done from the aspects of characteristics of modern economies. Namely, globalization is "...a real historical process of universality, homogenization and unification of economies by some significant principles, guidelines and behavioral norms, and as affirmations of a growing interconnection and dependence between individual economies and large companies" (Drašković, 2007).

Companies in developed economies, in the conditions of open borders of transitional countries, easily penetrate national markets, creating enormous pressure on domestic manufacturers. The competition grows and competition parameters are exactly those – "modern companies of developed economies". What actually characterizes them is the great investment capital, technological innovations, and long term adaptability to a dynamic buyer demand. This, in comparison to domestic companies, gives them advantage as well as drastic differences in the operational cost structure.

A modern company is an extremely complex organization, that is, besides everything else, characteristic due to its expensive and sophisticated technology and technological methods, great flexibility of manufacturing processes and products, and frequent changes in the organizational structure. All this results in significant increase of general or indirect costs, in comparison to direct costs. (Maher et al., 2006, cited by Kaličanin and Knežević, 2013.)

Basic changes in the cost structure in a modern company, in comparison to the period between two World Wars, and after the World War II until today, could be summarized as follows:

1. Manufacturing costs participation within total costs is decreased;
2. Direct costs of material participation (quantity and prices decrease) is decreased;
3. Direct labor is in great part replaced by costs of technology (maintenance and depreciation);
4. Factory utility costs increase due to greater participation of mechanization;
5. Costs of marketing, distribution and administration are greatly increased;
6. Financing costs increase due to: greater interest rates; greater loans of investments into technology and mechanization; greater inventory of final products due to greater choice, distribution and marketing channels; greater receivables from buyers due to greater competitive power; and due to general acceptance of lower amount of net assets in the company's operations in modern economies (Glad i Becker, 1997.).
7. Ecology costs become a component that becomes a larger burden of cost structure especially those in manufacturing that significantly affect ecology.
8. Manufacturing of parts of, or even a whole manufacturing line, is transferred by modern corporations to undeveloped countries while combining their superior technology with cheap resources, lower ecology standards, and such, which results in maximally lowering the costs of manufacturing while increasing their competitiveness far ahead companies of undeveloped transitional countries.
9. The affect of *development of new needs* philosophy is significant, and with that, significant is the creation of a market for own products with aggressive marketing as well. The creation of demand and markets for own products results in costs but decreases competitive power of others. This in turn results in a better balance of these costs with other costs of competitiveness, and this is perceived as a significant philosophy that companies of undeveloped companies cannot follow.

These changes brought the increase of significance of a more precise allocation of general costs by outputs in modern companies. Also, there are calls for changes in managerial and cost accounting especially, in many circles to engage in development theory and practice (Brimson, 1991; Kaplan, 1983; 1984; 1985; 1986; 1988; 1990; Johnson, Kaplan, 1987; Morrow, 1992). Hence, there is a growing number of techniques (i.e. ways) and the basis used in the allocation of costs to cost objects. As an answer to the need to create numerous information about costs, new systems of cost calculation are formed, new business philosophies regarding costs are developed and even new forms of accounting. As well, new innovations exist in practice, such as:

1. Activity Based Costing;
2. Attribute Costing;
3. Benchmarking;
4. Competitive Position Monitoring;
5. Competitor Cost Assessment;
6. Competitor Performance Appraisal on public financial statements;
7. Customer-focused Accounting;
8. Integrated Performance Management Systems;
9. Life Cycle Costing;
10. Quality Costing;
11. Strategic Costing;

12. Strategic Pricing;
13. Target Costing;
14. Value Chain Costing

Costing systems in modern companies are growing into cost management systems at great speed, end their assessment is becoming significantly more complex. At the same time, the development of strategic management in companies provides possibilities that the information necessary for management operating control systems are not based on organizational structure connecting centers of responsibility any more (cost, income, profit, investment), therefore, the significance of budget for costs of income, profit, profit rate in relation to investment, and such, is becoming smaller. Strategic management enables an approach to all organizational units as strategic units of operations (Kaplan, 2006). This changes the efficiency assessment of organizational units. It brings it to the level of comparison of information from strategic plans to information from balanced scorecards.

The new and the more complex cost systems and performance assessment systems ... set strategy and visions to the center. Financial and non-financial measures must be parts of these systems for employees at all levels of organization. First-line employees must understand financial consequences of their decisions and actions; higher level managers must understand carriers of long-term financial success. These systems are more than a group of quantitative and qualitative measure that represent a process guided by mission and strategy of business units. (Volkan et al., n.d.)

These changes require that the assessment of their own cost system takes into consideration the following: the degree of automation of production, the share of direct labor costs in total production costs, if the cost of direct labor basis for the allocation of overhead costs, with how many rates this distribution is done, on which way the systematization and classification of costs where done, for which cost objects are monitored costs, the time aspect of monitoring costs, the use of indicators of elasticity of the cost, the use of plan costs and separation costs of used and unused capacity.

2. Research Field and Goals

The research field in this paper is the effectiveness and efficiency of cost systems in manufacturing company of TC in execution of their tasks in conditions of transitional economy. The research results should enable identification of key dysfunctional areas in organization of cost systems. The hypothesis we try to prove in this paper is the following: "Cost systems in manufacturing companies of Tuzla Canton are dysfunctional from the aspect of needs for information about costs in conditions of transitional economy".

The defined field will be researched starting from the following goals:

G1: Establish the criteria for preliminary evaluation of cost systems in observed companies;

G2: Establish the purpose and the level of usage of cost information by management in the process of cost management of companies;

G3: Establish the synchronization of existing cost systems to the requests of modern practice of developed economies.

3. Research Sample and Methods

The targeted sample units, upon which the preliminary research has been conducted, are entities from the Tuzla Canton region. With that, the population consisted only of entities that are by their activity code, in the Statistical Bureau of Federation of Bosnia and Herzegovina and in the Agency for Statistics of Bosnia and Herzegovina, classified into one of the following groups: C – coal and stone exploitation, D – manufacturing industry, E – production and distribution of electric power, gas and water, F – construction. From the total population, from 1604 of companies, we have 36 entities in group C, 1007 entities in group D, and 33 and 528 entities in groups E and F respectively.

From the alphabetical list of entities who belong to named activity groups, with their head quarters in Tuzla Canton, through a table of random numbers, one hundred and fifty (150) companies were elected for the survey sample. The survey was conducted in the period from March 1 until May 31, 2013.

From the total of 150 companies, questionnaires were correctly filled and delivered by 103 companies. The reply rate is over 68.66%. It is important to emphasize that from the total population, over 6.42% of companies were surveyed, that is, approximately every 16th company was surveyed. After the conducted survey, entities were classified into large, medium and small, according to the criteria in Law on Accounting and Auditing in FB&H ("Official Gazette of FB&H, no 83/09, article 4.), effective on January 1, 2010.

The structure of surveyed manufacturing companies in Tuzla Canon, classified by size criteria, is given in Table 1.

Table 1 Structure of Surveyed Entities

Company:	Large	Medium	Small	Total
Number	31	37	35	103
% of participation	30.10	35.92	33.98	100.00

Source: Author's treatment

Such a structure of the sample where approximately equally represented large, medium and small enterprises we have accepted as a result of the following:
- The level of development cost of the system and their contemporaneity is far more important for large companies where management objectives by investing resources more complex and extensive;
- From the war, our big companies came out with quite uncompetitive resources and a small possibility to fix this situation in short term. It particularly emphasizes the importance of cost information in these companies to manage these resources.
- Although the share of large enterprises in the actual population are less, when we looking at the number of companies (10%), their participation in employment, total revenues, and the result (profit or loss) of the Company in Tuzla Canton is great.
- Application of statistical model such as ANOVA, etc., conducted study would provide the computational precision of relations, but would lose the qualitative side. By equating participation in the sample with the participation of the population in each size observed companies would provide good information for their mutual comparison. However, it would have data with qualitative side within these populations with unequal importance. For large companies, where their representativeness is most important, due to the low participation in the sample, these data would be the least relevant.

For analysis of data gathered in this research, we used statistical methods, being, descriptive statistical analysis of gathered data, and descriptive analysis of relationships between chosen data. In creation of our conclusion, we used knowledge gather through observation method, analysis and synthesis, induction and deduction, and without which we could not have observed any clearer the dysfunctional areas of costs systems as well as the reasons for their existence.

4. Research Results and their Interpretation

The first set goal in this research of characteristics of observed companies relates to the general evaluation of basic characteristics of cost systems that will classify them into traditional or modern group of cost systems. Then, research will enable us to observe in more detail the characteristics of cost systems that show the role of cost systems in informational support of cost management, and this is the second set goal. Finally, research includes the characteristics of costs and cost system of the companies in the developed countries. Here, in the realization of Goal 3, it will be assessed cost of the system observed enterprises from the perspective of the characteristics of the system cost companies in developed economies.

4.1 Preliminary Evaluation of Cost Systems

This part of paper shows results gathered as answers to the following questions in the survey:

1. What is the level of automatization of manufacturing in observed companies?
2. What is the percentage of participation of salaries in the total manufacturing costs?
3. Is the allocation of general manufacturing costs done on the basis of direct labor costs?
4. In how many rates is the allocation of general manufacturing costs done?

Table 2 Level of Manufacturing Automatization

Level of manufacturing automatization:	Companies:			Total:	%
	Large	Medium	Small		
Up to 20%	5	4	6	15	14.56
20-30%	2	5	8	15	14.56
30-40%	2	7	2	11	10.68
40-50%	1	5	6	12	11.65
50-60%	7	1	5	13	12.62
60-70%	5	4	3	12	11.65
70-80%	6	8	4	18	17.48
over 80%	3	3	1	7	6.80
Total:	31	37	35	103	100.00

Source: Author's treatment

In our opinion, the first question could enable us to observe the general technological level which is very important in comparison to modern companies and in evaluation of the state of cost structure of observed companies. The second question is a one of control. It should confirm if the evaluated level of manufacturing automatization is really that which contributes to decrease of percentage of labor costs in manufacturing costs.

Table 3 Salaries Participation in Total Manufacturing Costs

Salaries participation in total costs:	Companies:			Total:	%
	Large	Medium	Small		
Up to 20%	17	16	8	41	39.81
20-30%	3	7	11	21	20.39
30-40%	3	5	8	16	15.53
40-50%	5	3	2	10	9.71
50-60%	0	4	2	6	5.83
60-70%	2	1	3	6	5.83
70-80%	1	1	1	3	2.91
over 80%	0	0	0	0	0.00
Total	31	37	35	103	100.00

Source: Author's treatment

Also, the higher level of labor automatization should, in our opinion, also confirm the increase of utility costs in factories, and decrease of costs of material (due to better usage of raw materials and lower procurement prices). The third and the fourth question show us the characteristics of costing in observed companies. The increase of participation of non-manufacturing costs in total costs is the general trend of modern period that has no need for special justification.

Table 2 shows the results gathered by systematization of answers to the first question: *What is the level of automatization of manufacturing in observed companies?*

Table 4 Allocation of General Manufacturing Costs on the Basis of Direct Labor Costs

Allocation of general manufacturing costs on the basis of direct labor costs participation:	Companies:			Total:	%
	Large	Medium	Small		
YES	29	29	28	86	83.50
NO	2	8	7	17	16.50
Total:	31	37	35	103	100.00

Source: Author's treatment

From the table we can see that 41.75% of surveyed companies have their level of manufacturing automatization placed between 50-80%, and in 6.80% of companies, that percentage is over 80%. Higher level of automatization affects the increase of indirect costs, and with that, creates the need for more modern costing methods. In those conditions, with traditional costing, the probability of adequate allocation of indirect costs on carriers is smaller. Large companies have a higher degree of automation, as follows: for 58.06% of the company it results from 50-80%, and 9.68% of the company it results over 80%.

Table 3 shows the results gathered by systematization of answers to the second question: *What is the percentage of participation of salaries in the total manufacturing costs?*

From the gathered results, we can see that about 40% of companies has cost participation of direct labor up to 20%, and cumulatively, in 60% of companies have direct labor cost participation up to 30% in the total manufacturing costs.

Table 5 Number of Rates Used for Allocation of Indirect Costs

General costs are added into costing price of a product:	Companies:			Total:	%
	Large	Medium	Small		
Only one rate	12	23	21	56	54.37
Many rates are used	19	14	14	47	45.63
Total:	31	37	35	103	100.00

Source: Author's treatment

The high level of manufacturing automatization should have, as a consequence, a drastic decrease of direct labor cost participation. The shown percentages do not confirm that.

After recalculating data for "modern organizations, which tend to be a world-class company from the hypothetical financial report, developed on the basis of actual data on the development of cost structures of industrial companies in the United States, and for the year 1990, this share is approximately 12.73% (Hunger and Becker, 1997). Bearing in mind the ever-present trend in this indicator, from then until now, we can conclude that the share of direct labor costs in the production costs of modern enterprises today significantly below 12.73%. Starting from this conclusion and the data in Table 1.3, we come to a conclusion about the high share of direct labor costs in the production costs of our companies. For large companies, the share of direct labor costs up to 30% is present in 64.52% of these large companies. For SMEs it is present in 62.16% (mean) and 54.29% (small) companies. The situation in the latter is slightly more favorable than in large enterprises. This is again due to the fact that large companies have inherited a larger share of total employment of the population, which is most often the result of unproductive employment.

Table 4 shows the results gathered by systematiza-

tion of answers to the third question: *Is the allocation of general manufacturing costs done on the basis of direct labor costs?*

In the analysis of gathered results, we can see that in almost 83.5% of cases, direct labor exists as the basis for allocation of indirect manufacturing costs. According to the data gathered from answers to Question 1, where we got answers on a very high level of automatization, we can conclude that this basis is inadequate. However, when we take into consideration data from Table 3, on salaries costs participation in total manufacturing costs, where that percentage is unnaturally high and contradictory to data from Table 2, this conclusion may become questionable. It can also be noticed, that large companies in larger percentages take labor costs as the basis for classification of indirect costs.

Table 5 shows the results gathered by systematization of answers to the fourth question: *In how many rates is the allocation of general manufacturing costs done?*

As we can see, the research showed that over 54% of respondents use a single rate for indirect manufacturing cost allocation. This brings us, along with results gathered from the second and the third question, to a conclusion about a dominating participation of the so-called traditional models of cost systems.

The noticed discrepancies within answers to the first and the second question could be a result of:

- Low level of operational understanding of terms of automatization and mechanization of the operating processes; and
- The fact that the general characteristic of our companies is non-synchronization of employee structure with the requests of the operational process.

Usually, more employees than needed are engaged and discrepancies are existent in the aspect of qualifications, that is, adaptation to work quality. Often, a little attention is paid to the separation of that part of labor costs that is suitable to norms, and that part that has to credit expenses of the period because it is an excess. The salaries are taken in their total amounts in the calculation of costing price. The named factors lower the preciseness of gathered results working in the opposite direction: the first, because most of the surveyed understood automatization as mechanization, so the level of automatization was significantly lower; the second, because the participation of labor costs according to norms is less that results gathered from the survey. However, this does not change the fact that we are talking about traditional cost systems. Especially due to the fact that labor costs are the dominant base, and that only one rate is usually used for allocation of indirect costs.

Table 6 Systematization of Costs in Current Cost Systems

Cost system recognizes structure and amounts of the following types of costs:	**Companies:**			**Total:**	**%**
	Large	**Medium**	**Small**		
Costs by natural types	31	37	35	103	100.00
Marginal costs	6	8	5	19	18.45
Opportunity costs	1	4	1	6	5.83
Transactional costs	10	8	4	22	21.36
Competitor costs	1	1	6	8	7.77
Sunk costs	1	1	1	3	2.91
Differential costs	2	1	2	5	4.85
Discretion costs	1	2	0	3	2.91
Average costs by the unit of manufactured outcome	21	26	23	70	67.96
Costs of service by individual customers	5	7	8	20	19.42

Source: Author's treatment

Classification of costs within a cost system:	Companies:			Total	%
	Large	Medium	Small		
Fixed and variable	22	23	19	64	62
Explicit, implicit and alternative	0	0	1	1	1
By natural types	31	37	35	103	100
By cost carriers	31	37	35	103	100
By places of cost occurrence	19	10	8	37	36
Justified and unjustified costs	1	1	2	4	4
Avoidable and unavoidable	0	1	1	2	2
Controllable and incontrollable costs	0	0	0	0	0
By ones that create and ones that do not created added value for final customers	1	3	4	8	8

Table 7 Cost Classification
Source: Author's treatment

4.2 The Level of Development of Cost Management – The Factor of Cost Systems Development

The assessment of costs systems could not be satisfied only by previously asked questions. The modeling of cost system assessment must, in our opinion, go a step further towards the level of satisfaction of management by cost information in the process of cost management. Therefore, in the next part, we researched how current cost systems support cost management.

The level of cost system development in relation to cost management requests was assessed by the following questions:

How was cost systematization executed in the frame of the current cost system? By systematization, we mean, grouping costs in a way that results in providing useful information to the company management and to the external users of cost information.

The gathered results (*Table 6*) show 100% cost monitoring by types, and a high percentage of average cost determination. The cost of service by individual customers is monitored in about 20% of surveyed companies, which is a really low percentage. Without this information, it is hard to even imagine an orderly accounting that would be focused on customers, and which is a trend in developed econo-

Table 8 Cost Classification on Cost Objects

Cost classification on:	Companies:						Total:	%
	Large	%	Medium	%	Small	%		
- departments	17	54.84	9	24.32	2	5.71	28	27.18
- activities	2	6.45	5	13.51	3	8.57	10	9.71
- processes	3	9.68	5	13.51	5	14.29	13	12.62
- individual workplaces	0	0.00	3	8.11	0	0.00	3	2.91
- products	31	100.00	37	100.00	35	100.00	103	100.00
- services	5	16.13	11	29.73	7	20.00	23	22.33
- customers	2	6.45	5	13.51	6	17.14	13	12.62

Source: Author's treatment

mies (Guilding, 1999). Other information is present in small percentages.

Table 9 Time Aspect of Monitoring Costs
Source: Author's treatment

This leads us to the conclusion that the systematization of costs is mostly undermined by the needs of external reporting.

How are costs classified within the cost system? By cost classification, we meant ways in which costs are categorized in the execution of cost system tasks, both in the actual process of creation of cost information and as way in which the cost information is made available to users. Therefore, this classification also means those cost classification that stay within a company and cost system as an internal information. In this way, this question is partly a control question for results given in the previous table (*Table 6*).

The gathered results (*Table 7*) confirm the previous fact about cost systems being undermined to the external reporting. Costs are monitored by carriers and natural types in all surveyed, and data about cost classification to fixed and variable (in only 62% or surveyed) opens up the question if the cost price of products is determined correctly. Namely, this classification is necessary in order to correctly allocate fixed costs on that part that can be included into cost price of products and into the value of inventory and into that part that makes expenses of the period.

Coefficient of Costs

Cost movement is observed in:	Companies:			Total:	%
	Large	Medium	Small		
Short-run	11	12	16	39	37.86
Long-run	20	24	16	60	58.25
Cost movement is not observed	0	1	3	4	3.88

Source: Author's treatment

To which cost object do costs get attached to? The gathered results (*Table 8*) also confirm the undermining of cost systems to the needs of external reporting. The efficiency of departments is monitored much less, while other cost carriers appear alternatively.

Time aspect of monitoring cost behavior? Movement of costs in short-run gives us useful information about usage of fixed, variable, and marginal costs when making decisions about manufacturing scope, determination of the break-even point, acceptance of special orders, and such. The variability of all manufacturing factors in the long-run enables us to observe the optimal size of manufacturing line that is procured and on which the existing ones should be built on, and especially, the future output offer. It enables balancing of the assortment and quantities of the supply with the anticipated demand. It is this optimization of these processes that long term sustainability depends on.

The gathered results (*Table 9*) show low percentage of monitoring costs in short-run, and with that, low percentage of usage of named information in the decision-making process. Cost monitoring in the long-run appears in a higher percentage (58.25%), but not for previously named purposes. The long-run here means monitoring the movement of costs in previous years, as criteria for determination of planned costs in general operation projections for the upcoming period.

Elasticity coefficients are calculated?	Companies:			Total:	%
	Large	Medium	Small		
YES	11	13	17	41	39.81
NO	11	14	7	32	31.07
Only for some of the costs	9	10	11	30	29.13

Table 10 Overview of Calculating the Elasticity

Table 12 Separation of Used and Unused Capacity Costs

Do you use planned costs for evaluation of efficiency of operational performance?	YES	%	NO	%	Total companies:
Large companies	24	77.42	7	22.58	31
Medium Companies	20	54.05	17	45.95	37
Small Companies	22	62.86	13	37.14	35
Total:	66	64.08	37	35.92	103

Table 11 Planned Costs and Evaluation of the Efficiency of Operational Performance
Source: Author's treatment

Is the elasticity coefficient calculated for costs? The elasticity coefficient, that shows changes made due to costs in relation to changes in the manufacturing scope, according to the gathered results (*Table 10*), is not measured at all in the significant percentage (about 30%) of the observed companies.

The absence on information about cost elasticity disables a company to observe changes in costs when the operational scope of an activity is decreasing. This fact confirms the low level of development in cost management.

Do you use planned costs for the evaluation of operation performance? The analysis of results gathered from surveyed on this question (Table 11) should enable evaluation of significance of cost information in the process of planning and monitoring the realization of operational activities of a company. Larger significance would lead to a higher level of development of cost systems.

The fact that about 36% of companies do not use planned costs to evaluate efficiency of operational performance of activities shows that those companies do not have adequately developed planning system, and from there, they do not have adequately based monitoring system of operational performance.

Especially worrisome is data that about 23% of large companies does not use planned costs as means to ensure rational allocation of limited resources. If we remind ourselves that planning is one of the basic phases in the management's process, then these results are even more devastating. But, on the other hand, this also shows the reason why current results show the traditional organization of cost systems and limited use of information of these systems in realization of management. Framed planned operational projections made impossible to compare the realized and planned components of costs, which lowers trust in planning possibilities, and usage of planned information (especially about costs) as a serious control mechanism of limited resource allocation.

Are the used and unused capacity costs separated? This question was asked because information about capacity costs should have a significant place in the statements in financial and managerial accounting. In financial accounting, because (according to accounting standards) inventory value can only include costs of used capacities and costs of unused capacities should go to the expenses of the period. In managerial accounting, these information, from period to period, show how skilled the management is in managing capacities through creation of the manufacturing mix, what is the current excess of in-

Used and unused capacity costs are separated?	Companies:			Total:	%
	Large	Medium	Small		
YES	14	16	20	50	48.54
NO	17	21	15	53	51.46
Total:	31	37	35	103	100.00

Source: Author's treatment

stalled capacity, and what is the trend in the aspect of capacity usage rate.

Unused capacity costs are measured starting from:	Companies:			Total:	%
	Large	Medium	Small		
- Theoretical capacity	1	0	0	1	2.00
- Practical capacity	3	9	9	21	42.00
- Planned capacity	10	7	11	28	56.00
Total:	14	16	20	50	100.00

Table 13 Way in which Unused Capacity Costs are measured
Source: Author's treatment

These are especially significant information in making decisions on current and on investing into new manufacturing capacities.

The gathered results (*Table 12*) show that about 50% of companies do not separate these costs. This questions the correctness of reporting inventory value (manufacturing and final products) and the results in official reports, and it lowers the informational basis for quality evaluation of installed capacities management.

How are unused capacity cost measured? This question was answered only by those who answered the previous question with the YES, that is, that in their company, the separation of used and unused capacity costs is existent.

The gathered results show that over half of companies, that answered that they determine unused capacity costs, use planned capacities as their basis (Table 13). Having in mind that planned capacities are determined by sales possibilities, this does not enable us to observe costs of excess installed capacities, which is important for making decisions about investing and for evaluation of management success in creating manufacturing-sales mix of products. Planned or budgeted capacity in the conditions of unfavorable competitive position of a company on a market is most often significant below the practical capacity. Companies' practices in these cases are that the fixed costs of installed capacities are brought down to its planned level in total, which significantly increases product's costing price. This enables postponement of costs of unused capacities in the value of inventory, and it decreases competitiveness of products in the following periods.

Finally, the analysis of results of the survey leads us to a conclusion that cost systems in observed companies are primarily undermined to external reporting. In realization of these tasks, we can notice that a significant percentage of companies does not do correct validation of inventory and expenses of the period. Adequate attention is not paid to the questions of separation of used and used capacities, and fixed and variable costs. When allocating costs, focus is put on basic cost carriers, that is, products and services, but on a wide specter of possibilities in this area, which would enable receiving useful information for management of operations. Also, evaluation of capacity usage, role of planned costs and time aspect of cost behavior are not adequately used as important means of companies' operations control and planning.

All of the above bring us to a conclusion about a low level of cost management development in the observed companies. From there, larger request are not laid before cost systems, and that results in stagnation of their development.

4.3. Modern Operations and Cost Systems

In this section we will evaluate the functionality of the system cost of our company in terms of market liberalization and growing competition. Using Kaplan's Model (1990) of cost system development, we will try to determine the current level of cost system development in domestic companies, which would help, in many ways, define guidelines for further development.

4.3.1. Modern Cost Systems and Companies of Transitional Economies

When we compare data from tables formed on the basis of surveys and above mentioned characteristics of modern companies, we will notice significant differences. The cost structure of our companies is at a lower level, because the current economic ambiance has not provided them with enough of a competitive initiative to adapt to a more dynamic demand, great technological changes, manufacturing automatization, and other characteristics of modern economies markets. For domestic companies, in the conditions of border openings, this creates a great fallback behind the competitive power. Therefore, they must flow in to the adaption process as soon as possible. The cost systems segment in this activity is especially important. Why? As we stated before, available resources of our companies are limited. The technology has fallen behind significantly; production lines, equipment and buildings are greatly depreciated and pre-dimensioned; laborers are used to the security of their social status from the past system, and there are much more of them than needed at every level of operations; operational environment goes without an orderly political and economic ambiance, it is territorially segmented, without functional authorities structures and such. If we take into consideration all above mentioned, then, costs systems should be able to offer the following types of information:

a) Information for diagnosis of internal possibilities to determine:

   1. The quality of available resources from the aspect of usage;

   2. The effectiveness and the affectivity of resource usage;

b) Information for *Benchmarking* to determine:

   1. Resource competitiveness;

   2. Resource usage competitiveness;

   3. The competitiveness of outcome as a resource investment synthesis.

c) Information for assessment of operational value of available resources, where the following resources could be answered:

   1. In what amount can invested resources on the market be valorized as a part of outcome value of companies?

   2. What is the relationship between the bookkeeping value of the available company assets and the real operational value of those assets?

   3. What is the relationship between operational value of assets that company uses and selling value of those assets?

d) Information needed to create adequate macroeconomic measures that companies could use to give to the authorities and relevant institutions. Primarily, they must provide information significant for determination of:

   1. Liberalization dynamics of certain markets;

   2. Favorability for tax charges/benefits, that is, tax politics;

   3. Activation of natural resources to support recovery of business entities, that is, concession politics;

   4. Needs and focuses of government help in financing scientific research in fields of reengineering, market research, promotion of competitiveness of domestic companies, development of intensive labor activities, and such.

Therefore, the development of cost systems is especially important the transitional ambience, because our companies are in the position to "defend" themselves on domestic markets due to the increasing penetration of foreign companies on domestic markets. When you are in a position to follow the defense strategy, then the cost control is far more important (Langfield-Smith, 1997), and with that, the role of cost systems much greater. Normally, we have to be careful that the investment into the development of a cost system follows a cost-benefit philosophy (Martin and Stevens, 2011). Therefore, it is important not to try implementing the most current news in science and practice in this field at every cost, especially not without one critical adaption to the transitional economy ambiance.

4.3.2. Cost System Assessment from the Aspect of Kaplan's Four-phase Development Model

Back in 1990, Kaplan[1] developed a *four-phase* model of cost systems development, with the following phases of development:

Phase 1. Cost systems that offer poor data with weak quality;

Phase 2. Cost systems focused on external reporting;

Phase 3. Cost systems relevant for managers also;

Phase 4. Integrated cost systems.

Cost systems in the **first phase** of development, according to Kaplan, are characterized by the general absence of integrate, that is, wholeness and ability to assess the financial system. These systems do not correctly record material, labor, or operational costs of transactions and/or do not record all outputs created in the manufacturing process. Those systems are usually found in small or newly organized operations, where not enough attention is paid to the design of cost systems and systems of internal controls.

Cost systems in the **second phase** are observed as the ones who have an adequate integrity, that is, the wholeness of data and internal control. However, these have serious limitations in the operational control, the correctness in calculations of product costs and profitability analysis.

The **third phase** is characterized by more modern cost system along with the currrent system of external reporting. More modern cost systems more correctly allocate indirect costs and resource costs of organization with a support on product, manufacturing lines, departments, and buyers. This makes product design, manufacturing processes, and determination of prices and product mix much easier.

In the fourth phase of development, companies should have integrated cost systems that satisfy the needs of both the external and the internal beneficiaries. Two management systems must integrate – one for product and profitability analysis of buyers, and one for on-line feedback and measurement execution.

If we were to determine, according to the named classification of development phases, in which development phase are cost systems of the above observed companies, then the described characteristics point us to the second phase. In tables, the presented data about companies of Tuzla Canton show dominant movement of costs systems to the satisfaction of external reporting needs. And, we can recognize all the above system limitations of the second phase (un-timeliness of information, aggregation of results, focus on result not the activities that create them). The correctness of cost calculations of products, due to a small number of bases for general cost allocation, is questionable. The profitability analysis in these companies is framed, without adequate allocation of costs by customers.

5. Conclusion

At the end, we can conclude that the research on efficiency and effectiveness of cost systems for observed companies proved the set hypothesis in this paper, that is, that the cost systems are dysfunctional, meaning that they do not fulfill the purpose they should in the conditions of a transitional economy. The information they create are firstly intended for external reporting. Therefore, these systems are not in the function of a system of operative control and analysis of profitability in a way that would enable rational use of limited resources. The preliminary assessment has shown that these are traditional cost systems. Additional research has pointed out the low level of development in the field of cost management, which is one of the reasons that not enough attention is given to the development of cost systems. Management requests for cost systems information are not in accordance with the needs of the current economic and social environment. The consequence that arises is that there are no investments put into modernization of cost system organization in order to proactively execute their tasks. Opening of the market, on the other hand, exposes companies to greater competition of foreign companies. They have cost systems at a higher level of development as a significant factor in realization of competitive advantages.

Therefore, domestic companies must go towards higher phase of cost system development (adapting current systems), towards phases three and four on the Kaplan's systematization. These systems must also have a special part of activities that will accept current positions in companies that are entering the processes of transitional economy. This primarily means definition, calculation, and reporting of the effect of non-competitiveness of available resources and organization in relation to modern companies of developed economies.

References

1. Brimson, J. A. (1991). "Activity Accounting: An Activity-Based Costing Approach", New York: John Wiley.
2. Drašković, V. (2007). „Manifestacije ekonomske globalizacije", EKONOMIJA / ECONOMICS, Vol. 14, No. 1, pp. 257-274. Available at: www.rifin.com (Accessed on: April 30, 2014)
3. Glad, E., Becker, H. (1997). „Activity Based Costing and Management", West Sussex, England: John Wiley & Sons Ltd.
4. Guilding, C. (1999). "Competitor-focused accounting: an exploratory note" Accounting, Organizations and Society 24, pp. 583-595. Available at: www.elsevier.com/locate/aos (Accessed on: January 10, 2014)
5. Johnson H. T., Kaplan, R. S. (1987), "Relevance Lost: The Rise and Fall of Management Accounting", Boston, Mass.: Harvard Business Scholl Press.
6. Kaličanin, Đ., Knežević, V. (2013). „Activity Based Costing as An Efficient Strategic Management Process", Economic Annals. Vol. 58, No. 197, pp. 95-119.
7. Kaplan, R. S. (1990). „The Four-Stage Model of Cost Systems Design", Management Accounting (February), pp. 22-26.
8. Kaplan, R. S. (2006). „The Demise of Cost and Profit Centers", Working papers. Available at: http://www.hbs.edu/faculty/Publication%20Files/07-030.pdf (Accessed on: May 10, 2014)
9. Kaplan, R. S, (1983), „Measuring Manufacturing Performance: A New Challenge for Managerial Accounting Research", The Accounting Review (October).
10. Kaplan, R. S. (1984), „Yesterday's Accounting Undermines Production", Harvard Business Review (July/August).
11. Kaplan, R. S. (1985), „Accounting Lag: The Obsolescence of Cost Accounting Systems", in Clark, K. and Lorenze, C., (eds.), Technology and Productivity: The Uneasy Alliance, Boston: Harward Business School Press.
12. Kaplan, R. S. (1986), „Introduction", Cost Accounting for the 90s: The Challenges of Technological Change Proccedings, Montvale, New Jersey: NAA.
13. Kaplan, R. S. (1988), „Relevance Regained", Management Accounting (UK) (September).
14. Langfield-Smith, K. (1997). „Management Control Systems and Strategy: A Critical Review. Accounting", Organizations and Society. Vol. 22. No. 2, pp. 207-232.
15. Martin, L. R., Stevens, K. C. (2011). "Investment in Cost Accounting Systems: Decision Criteria", The Journal of Applied Business Research. Vol. 6. No. 3, pp. 19–25.
16. Morrow, M. (1992), "Activity-Based Management", Hertfordshire, UK.: Woodhead-Faulkner.
17. Volkan, I. R., Pete, Ş., Cardoş V. D. (n.d.). "Cost and Management Systems Between Cost Calculation and Performance Measurement". pp. 1535-1536. Available at: http://steconomice.uoradea.ro/anale/volume/2008/v3-finances-banks-accountancy/280.pdf (Accessed on: March 30, 2014)

(Endnotes)

1 Robert S. Kaplan (born in 1940) is a Baker Foundation professor at Harvard Business School, United States of America, and, along with David P.Norton, co-creatorcreator of, the "Balanced Scorecard". He published paper in the fields of strategies, cost accounting, and management accounting. In 2006, Kaplan received the Award for life contribution in the area of management accounting from the American Accounting Association. In the same year, he was elected into a Hall of Fame in the area of accounting.

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Sado Puškarević
Amra Gadžo

(Dis)funkcionalnost računovodstvenih troškovnih sustava u proizvodnim poduzećima Tuzlanskog kantona

Sažetak

Rad prikazuje rezultate provedenog primarnog istraživanja o funkcionalnosti troškovnih sustava proizvodnih poduzeća Tuzlanskog kantona (u nastavku „TK"). U radu se ocjenjuje njihova primjerenost potrebama ovih poduzeća, sadašnjim i onima koje promjene okruženja donose. Od suvremenosti ovih sustava u mnogome ovisi proces upravljanja troškovima koji je ključni čimbenik prilagođavanja poduzeća uvjetima suvremenoga tržišta.

Upravljanje troškovima koje se zasniva na informacijama troškovnoga sustava omogućava poduzeću da zauzme pravilan stav prema kupcima na tržištu i prema konkurenciji. Također, kvalitetne troškovne informacije uvjeti su za učinkovito raspolaganje ograničenim resursima u tranzicijskom razdoblju razvoja društva. Otuda, samo kvalitetno dizajniran troškovni sustav u tranzicijskoj ekonomiji omogućit će oporavak, a zatim rast i razvoj poduzeća. To naglašava važnost istraživanja navedene problematike za tranzicijske zemlje.

Rezultati istraživanja trebali bi pomoći u edukaciji rukovodećega kadra o potrebi za usavremenjivanjem organizacije poslovanja, u prvom redu računovodstvene funkcije i to u dijelu organizacije troškovnih sustava. Utvrđeni nedostaci, kao i odstupanja u odnosu na aktualne potrebe za informacijama o troškovima, putokazi su za primjeren proces redizajniranja troškovnih sustava preduzeća tranzicijske ekonomije.

Ključne riječi: ocjena troškovnih sustava, proizvodna poduzeća, tranzicijska ekonomija.