**Marek Potkány, Alexandra Hajduková, Katarína Teplická**

# TARGET COSTING CALCULATION IN THE WOODWORKING INDUSTRY TO SUPPORT DEMAND AT A TIME OF GLOBAL RECESSION

*At a time of global recession, more and more companies are increasingly looking for ways to innovate management systems. The main aim of this paper is to present the practical possibilities of a target costing application within the calculation system of the woodworking industry. This calculation uses the basic principles of value analysis, by which it is possible to suggest alternatives to the functional and cost differentiation of the product, and is the main information for managers in decision-making process.*

Keywords: cost, calculation, preferences, value analysis, functional cost analysis, woodworking industry

## Introduction

In the past, cost calculation was understood as methods focused on matching expenses to actual output. With economic development, this calculation method loses its significance because the changes effecting the structure of business expenses are reflected in an insufficient way. Under current conditions (lower demand, growing pressure from competitive businesses, shortening life cycle of output, effort to reduce production costs), companies are forced to apply new calculation methods, whose priorities are to be mainly oriented towards the market and the consumer. These methods are linked with specific approaches to price-making [Drury 2004]. In practice, we most often use the procedure called Target Costing, which is based on the principles of value analysis.

The main aims of research activities and their benefits to business practices are finding opportunities from those decision-making alternatives, which the ma-

Marek Potkány, Technical University, Zvolen, Slovakia
e-mail: potkany@vsld.tuzvo.sk
Alexandra Hajduková, Technical University, Zvolen, Slovakia
e-mail: alexandra.hajdukova@gmail.com
Katarína Teplická, Technical University, Košice
e-mail: katarina.teplicka@tuke.sk

nagers can use for determination of price and functional differentiation of the product.

**Target costing calculation**

In general, the calculation is an operation with the goal of determining the actual and expected cost, as well as other price components related to the calculation unit, by means of appropriate methodology. The target costing calculation, as a specific type of calculation, aims to allocate the cost to single components or the preferences of a selected product. These are based on market research. It is obvious from the definition that the assigned calculation is only an estimate. The best use of the calculation is in the first stages of the product's manufacture.

Calculation of the final cost, also called target costing, started in Japan, and in the 80s of the last century it spread to our continent through several Americans sub-companies located in Western Europe. In the 1990s this method of calculation was used by over 80% of Japanese firms, working in machine-oriented and electro-technical industries [Šoljaková 2009].

Product costs are mainly influenced by the characteristics and the process of production. These aspects are the results of research, development and the production preparation of each product. Therefore, we decide about the product cost at the planning stage of the product, and at this time the technological process and the characteristics of the product are defined. In practice it has been proven that 80 to 90% of costs related to output are the result of decisions made at the planning stage of the product. Consequently, the possibility of managing the costs has inspired the development of new control devices at this stage [Serina 2005].

The main idea of the target costing calculation is to determine the maximum limit of allowable costs, which should not be exceeded during production. This limit is not determined according to the basic technical and economic standards of consumption in place, but on the contrary, it is determined as the surplus of the target price after we deduct target profit [Foltínová et al. 2007].

$$\text{Allowable cost} = \text{target price} - \text{target profit} \qquad (1)$$

**Theoretical basis of the research**

The methodology for the target costing calculation is consequently explained by the theoretical basis of the research.The calculation model according to Lajoš contains all the basic steps of the target cost calculation [Lajoš 2006] and they are:

A. Market research.
Its role is to identify the preferences and the requirements of potential customers, in order to develop a product that will satisfy the demands of consumers, not only in terms of its service and characteristics, but also of its price. Consequently,

with analysis, we can gain knowledge about the product position of competitive businesses, with a goal to achieving the desired competitiveness of the developing product.

To identify customer preferences and requirements for the product in terms of its features and prices, it is possible to use the method of direct questioning and modeling the method of choice. One method of direct questioning is the method of direct questions, which is the simplest approach to testing prices. The essence of this method is to ask a direct question on price, so such as how much a potential customer would be willing to pay for a particular product.

Weiner [2001] states that the main aim of such a survey is the measurement of price elasticity, in which case it is necessary to question two samples of respondents in two different prices – a monadic test. Another approach to identifying customer preferences and requirements is the use of the Van Westendorp price sensitivity measurement model. In this model, price sensitivity relates not to absolute price, but rather to perceived value of the product or service. Westendorp [1976] states that consumer price expectations and tolerances are measured by asking a set of price perception questions.

The outcome of the price sensitivity test is a graph based on cumulative responses. The optimal price point (OPP) is the point at which the same numbers of people consider the product to be too cheap or too expensive. The group of potential customers who find the price acceptable, in this case is maximized. For this reason, the price is often recommended in the outcome of the test of price sensitivity.

The selection of modeling methods includes:
 – conjoint method – defines the attributes of products, which are of the greatest interest to consumers. This method allows the determination of the optimal characteristics of the product so as to maximize customer value while minimizing costs,
 – the method of compromise – brand versus price. Data collected through this method can be processed in different ways. In the base case, the acquired preferences may join a simple simulator selection. Data can also be treated as a conjoint analysis of two attributes. The outcome of this analysis is a processed graph of price elasticity [Lyon 2002].

B. Determination of target price.
The price proposal must be made according to business strategy and must be in accordance with the disposition, role and characteristics of the product, and must respect the influence on potential customers. The target is to achieve a ratio between price and product utility, which will be accepted by the market [Freiberg, Macík, Zrály, 2000]. The determination of final price is based on market research, while we must consider [Potkány 2005]:
 – the product position in a competitive environment – we must take into consi-

deration whether the product is new, a newly-developed product, a newly-invented product or a product that already exists on the market,
– the quality of the product – whether it is a product with unique characteristics or a comparable product.

C. Determination of target profit.
The target profit is an important element of the final price. The amount of profit depends on the financial goals of each corporation. Generally, it is not determined as an absolute amount, but rather as a percentage amount, usually with the use of the return-on-sales coefficient ($R_S$) or return-on-cost coefficient ($R_C$), or the profitability coefficient of investment. The reason why we use these coefficients is because in order to obtain information about its value in selected industries and competitive firms. This coefficient can be determined from available information on sales from financial statements or other account documents [Tumpach 2008].

Levels of specific profitability coefficients are possible to determine based on generally-known formulas, while for return-on-sales it is possible to use formula 2:

$$R_S = \frac{Profit}{Sales} \tag{2}$$

Because of the meaning of this calculation for future decision-making, we determine the target on return-on-sales as the arithmetic average of historical return-on-sales for several accounting periods. The older the period, the lesser the gravity of importance. The return-on-sales in x-accounting period ($R_{Sx}$) is determined as the multiple of several returns from previous accountings periods ($R_{S\ x-1,2,...n}$) and the gravity of importance ($w_{x-1,2,..n}$) as shown in formula 3 [Tumpach 2008]:

$$R_{Sx} = [(R_{S\ x-1} \times w_{x-1}) + (R_{S\ x-2} \times w_{x-2}) + ........ + (R_{S\ x-n} \times w_{x-n})] / \sum_{i=x-1}^{n} w \tag{3}$$

where: $R_{Sx}$ is return-on-sales in x-period, $R_{S\ x-1}$ is return-on-sales in x – one period, $w_{x-1}$ gravity of importance in x- one period, n – last accounting period.

For determination of allowable cost (AC) with the use of the return-on-sales coefficient, it is possible to determine the cost according to formula 4:

$$\text{Allowable cost} = \text{target price} - (\text{target price} \times \frac{R_S}{100}) \tag{4}$$

For target profit determination, it is possible to use the return-on-cost coefficient $R_C$, while for the initial data we can use formula 5:

$$R_C = \frac{Profit}{Cost} \tag{5}$$

When determining the assumed sales-on-cost we follow similar steps as shown above, using the calculation of the arithmetic average of historical return- on-cost. Then it is possible to show the level of allowable cost on the basis of formula 6:

$$AC = Tp - [(Tp \text{ x coefficient } R_C) / (1 + \text{coefficient } R_C)] \tag{6}$$

where: AC is allowable cost, Tp is target price, $R_C$ return-on-cost (formula 5).

D. Allowable cost determination.
Allowable cost corresponds to costs that are determined by top management, so that the business can produce with a given rate of profitability and at a given target selling price. Allowable cost represents the main goal and at the same time supplies information to those, who assist with the calculation process as regards the target cost. Allowable cost also demonstrates what cut-back-on-cost the members can expect and what cut-back they need to achieve. Allowable cost does not take into consideration the capacity problem for the company and suppliers [Lajoš 2006].

These costs are allocated as the difference between the potential market price and the expected target profit of the product. With a comparison of the allowable cost and the standard manufacturing cost, we can assess the final gap. [Freiberg, Macík, Zrály 2000]. It is possible to determine the allowable cost of specific components of a product by means of 2 options [Šatanová, Potkány 2011]:

1. The first option – the allowable cost is determined at the level of absolute actual cost. The absolute level of costs is based on the standard of consumption of direct costs and on standards of overhead costs from the pre-planning calculations of the company.
2. The second option – the allowable cost is determined as a multiple between the gravity of importance of specific customer preferences and the percentage level of selected preference according to specific components.

The standard cost must be lower than the allowable cost, but if this relation is not achieved, their harmonization is necessary. We can divide the steps that we use for lowering the cost into two groups [Floreková 2005]:

– steps that come out of technical and structural product analysis, the product's characteristics, functions and costs, that are spent on the product (value analysis),
– steps that are oriented towards the analysis of company operations and activities and search for improvements in the process (reengineering, JIT).

The value analysis represents a systematic approach to the evaluation of product characteristics. This approach allows the determination of alternatives which can help to improve the value of the product, which is defined by the ratio between its utility and costs. It is possible to increase this ratio using 2 methods [Foltínová et al. 2007]:

– by preserving product characteristics and by lowering the cost,
– by maintaining the current level of cost and improving the product's characteristics.

Value analysis looks for cheapest product solutions for improvement and reduction of costs connected with all parts of the product. These solutions do not restrict the product's primary function. The main idea is to eliminate unnecessary functions and processes which in fact increase the cost on capacity. From the value analysis point of view, the most important information is that which shows more closely the relationship between customer requirements on product capacities and its specific components – quantity-function deployment. Another crucial piece of information is knowing where it is essential to consider a discrepancy between customer preferences and real costs – functional cost analysis [Tumpach 2008].

As often happens in real life, the high costs of a product are not the results of real customer requirements, but the results of what we assume customers might require from the product. Accordingly, before the calculation of target cost, it is necessary to find out the basic requirements and capacity preferences of customers on the basis of accurate market research. Then we need to synchronize those requirements and preferences with specific capacity components (parameters, parts, sub compartments). This is the role of quantity-function deployment. Designing the quantity-function deployment must be carried out by a highly-qualified employee (technologist, designer, constructor), who according to knowledge of the technological manufacturing process and the function of selected components, determines a ratio in which selected capacity components ensure customer-selected preferences.

The main task of the research is to present practical use of target costing methodology in connection with the principles of value analysis for decision-making in the woodworking industry. By this approach it is possible to suggest alternatives to the functional and cost differentiation of the products. The primary target of the recommended operation is the application of calculation methods to determine the final expenses of chosen products in the woodworking industry. In this paper some scientific methods related to research (analysis and synthesis, induction and deduction, demand methods, scientific abstraction) and data processing methods (statistical analysis of one-dimensional data; and comparison of current and fore passed parameters) were used.

## Research methodology

### Material

The subject of the presentation is a weekend garden cottage, made from northern spruce. The wall profile is 50 mm wide, while the construction is secured with a double tongue-and-groove joint. Fig. 1 shows the specific characteristics of the selected product.
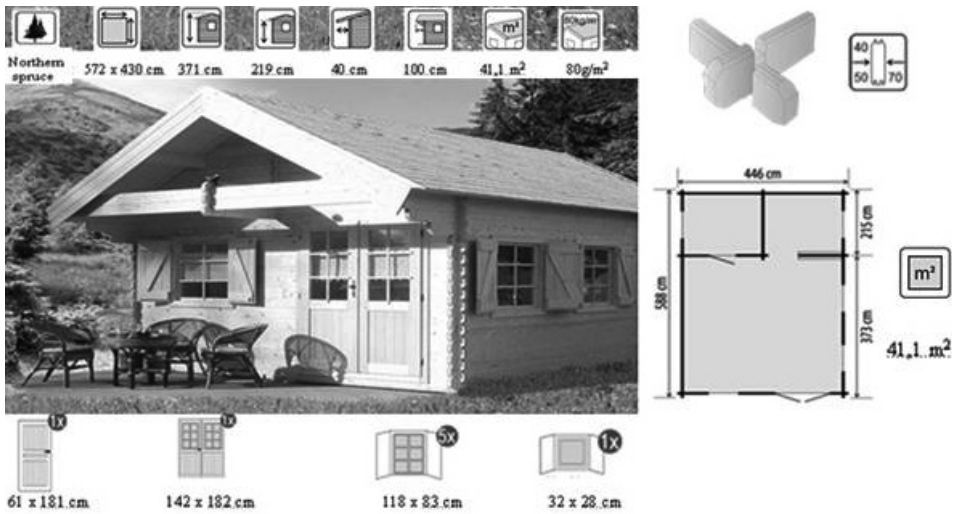
**Fig. 1. Technical parameters of garden cottage (BPP, Víkendová chatka ALPINA, 2010)**
*Rys. 1. Parametry techniczne domku ogrodowego (BPP, Víkendová chatka ALPINA, 2010)*

With precise market research, the basic preferences of the consumers when buying the selected product (fig. 2) were determined. Research was also carried out on the price level accepted by the consumer. This research has shown that the ideal market price is € 9,320. Customers are willing to accept this level of price, based on the functionality and value of the product but also the prices of competitive manufacturers.

In order to achieve the scheduled target it was essential to systematically proceed according to the following steps:

A. Analysis of customer preferences
Analysis of customer preferences is the key area for successful usage of target costing methodology. To use it in practice it was necessary to carry out:
 – a classification of the estimated preferences defining the role and the characteristics of the selected product. These classifications are critical for the potential customer before buying the product. At the same time, the research methodology of prospective customers was used,
 – a questionnaire concept meant to find out the preferences of the role and characteristics of the selected product. Here the methodologies of deduction were used,
 – data collection, questionnaire evaluation and creation of quantitative-functional analysis. This year scientific methods such as demands, statistical analysis of one-dimensional data, and deduction were used.

For market research purposes, a questionnaire was created. Its objective was to find out preferences on the specific functions of a garden cottage, from the point of

view of a potential customer. The questionnaire aimed to gain the necessary information to create quantity-function deployment and consequently functional cost analysis.

Data for the questionnaire survey was collected in January and February 2010. During this period 160 questionnaires out of 200 were collected, both in print and e-mail form. The overall backflow of questionnaires represented 80%. Due to the fact that 2 questionnaires were filled out incorrectly, only 158 questionnaires were taken into consideration.
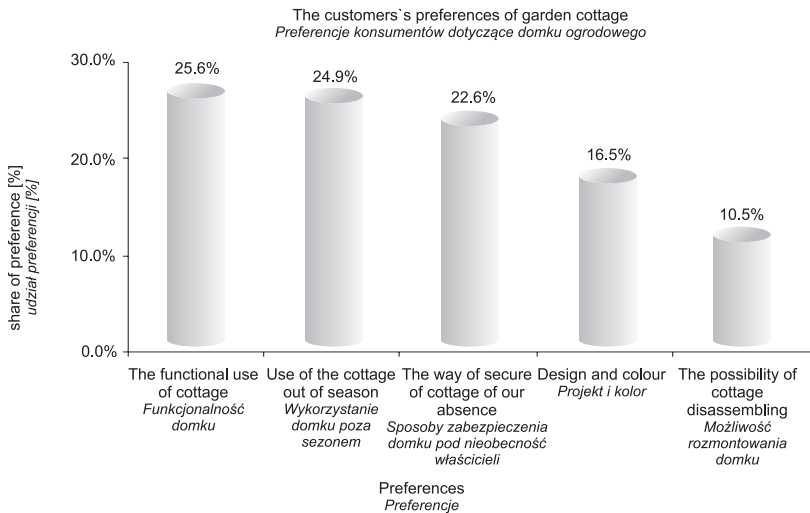


The customers`s preferences of garden cottage
*Preferencje konsumentów dotyczące domku ogrodowego*

**Fig. 2. Customer product preferences**
***Rys. 2. Preferencje użytkowników dotyczące produktu***

As shown in fig. 2, the preference order from the respondent point of view is the following:
 1. The functional use of the cottage (P1),
 2. The possibility to use the cottage out of season (P2),
 3. The way the area is secured at time of absence (security against intruders) (P3),
 4. Design and colour (P4),
 5. The possibility of disassembling and moving the cottage to a different place (P5).
Out of 158 respondents, 18 (11.4%) used the opportunity to define their own preferences. As OTHER preferences, the respondents the most often stated the locality of the cottage (distance from the place of residence) and the price of the cottage. Because these preferences cannot be influenced in any way by product fundamentals or by calculation methods, such answers were excluded from the evaluation.

B. Target costing application with the use of value analysis principles
In order to apply the calculation principles to target costing and value analysis in selected entries, it is necessary to proceed with following steps:

– a calculation of estimated income and of final profit, while a comparison me-
thodology of current and previous parameters were used,
– an assessment of the amount of overall costs and the costs of the individual
components of value analysis and analysis of functional costs. Also an assess-
ment of the discrepancy between preferences and actual costs. At this stage
the methodology of analysis and synthesis was used.

The use of target costing calculation alone, on the selected product – a garden
cottage, consist of individual steps, mentioned in chapter 2 of this article. The
source data for this calculation are presented in table 1.

**Table 1. Determination of return-on-sales value for the year 2010**
*Tabela 1. Określenie wartości zwrotu ze sprzedaży za rok 2010*

| Year<br>*Rok* | Profit after tax<br>*Zysk po opodatko-<br>waniu* (€) | Sales<br>*Sprzedaż*<br>(€) | $R_S$ (%) | Gravity<br>*Waga* | $R_S$ × weight<br>$R_S$ × *waga*<br>(%) |
|---|---|---|---|---|---|
| 2007 | 79 599 | 3 893 116 | 2.04 | 7 | 14.28 |
| 2008 | 106 818 | 4 792 505 | 2.23 | 8 | 17.84 |
| 2009 | 216 246 | 5 365 897 | 4.03 | 9 | 36.27 |
| Total<br>*Ogółem* | | | | 24 | 68.39 |
| Estimated value $R_S$ for the year 2010<br>*Szacunkowa wartość $R_S$ za rok 2010* | | | | | 2.85% |

– Return-on-Sales. For the calculation of estimated return for the year 2010, for-
mula 3 was used, because the aim was to achieve the most accurate estimated
return for the year 2010. The level of gravity (weight factor) is determined by
the particular accounting period from the years 2007, 2008 and 2009, as the
end number of a given accounting period. The result of estimated and, in this
case, also desired return-on-sales is at a level of 2.85%. From this information
it is possible to determine target profit.
– The calculation of target profit. For the calculation of target profit formula
5 was used, and its origin comes from the estimated return-on-sales for the
year 2010. The target price level is € 9,320. Customers are willing to accept
this level of prices, based on the functionality and value of the product, but
also on the prices of competitive manufacturers.
Target profit = € 9,320 × (2.85/100) = € 265.62.
– The calculation of allowable cost value. According to formula 1, it is consequ-
ently possible to determine this coefficient.
The total allowable cost of the garden cottage has the value = € 9,320 –
– € 265.62 = € 9,054.38**.**

A key factor of the target costing calculation is creation of quantity-function
analysis, which determinates the success of this calculation. By means of the cu-

stomer preferences and by the assessment of the relationship between customer requirements on product functions and its specific parameters, it is possible for a highly qualified employee to assemble the quantity-function deployment by (table 2).

**Table 2. Quantity-function analysis of the garden cottage**
*Tabela 2. Analiza ilościowo-funkcjonalna domku ogrodowego*

| The customer preferences *Preferencje konsumentów* | The basic components of the garden cottage *Podstawowe elementy domku ogrodowego* [%] | | | | | | |
|---|---|---|---|---|---|---|---|
| | Interior walls *Ściany wewnętrzne* | Floor *Podłoga* | Mansard *Mansarda* | Roof *Dach* | Doors/ /windows *Drzwi/ /okna* | Other parts *Inne części* | Installation package *Pakiet instalacyjny* |
| P1 (25.6%) | 34 | 60 | 80 | 30 | 30 | 50 | 90 |
| P2 (24.9%) | – | 20 | – | 40 | 10 | 40 | – |
| P3 (22.6%) | – | – | – | – | 30 | – | 10 |
| P4 (16.5%) | 33 | – | – | 10 | 20 | – | – |
| P5 (10.5%) | 33 | 20 | 20 | 20 | 10 | 10 | – |
| ∑ | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

This analysis can be performed only by a highly qualified employee (technologist, designer), who has knowledge of the components of individual products and their relation to the performance of customer preferences. The customer should never comment on such matters because his role in the target costing calculation is to define the requirements for the price of the product and the preferences. The customer has no idea about the functional relationship of the product and its components. Such consideration would lead to substantial errors in determining the allowable costs.

Consequently it is necessary to solve the problem of relative cost determination for specific components. The relative cost of specific components can be calculated using 2 alternatives (shown above), while in this case alternative 1 will be used. The level of cost is determined on the basis of an estimated pre-planning calculation that shows the results of the total cost for individual components (parts of the product).

**Table 3. Preliminary costing of the components of the garden cottage**
*Tabela 3. Wstępny kosztorys elementów domku ogrodowego*

| Components<br>*Elementy* | Direct cost<br>*Koszt bezpośredni*<br>[€] | Overhead cost<br>*Koszty pośrednie*<br>[€] | Cost of the components<br>*Koszt elementu*<br>[€] | Relative Cost<br>*Koszt względny*<br>[%] |
|---|---|---|---|---|
| Circuit interior walls<br>*Ściany wewnętrzne wokół obwodu* | 1 128.09 | 1 342.99 | 2 471.08 | 27.3% |
| Floor<br>*Podłoga* | 230.01 | 273.83 | 503.84 | 5.6% |
| Mansard<br>*Mansarda* | 61.64 | 73.38 | 135.02 | 1.5% |
| Roof<br>*Dach* | 1 069.24 | 1 272.93 | 2 342.17 | 25.9% |
| Doors and windows<br>*Drzwi i okna* | 395.43 | 470.76 | 866.19 | 9.6% |
| Another parts<br>*Inne części* | 1 188.61 | 1 415.04 | 2 603.65 | 28.7% |
| Installation package<br>*Pakiet instalacyjny* | 60.20 | 71.67 | 131.87 | 1.5% |
| ∑ | 4 133.22 | 4 920.60 | 9 053.82 | 100 |

The direct cost is determined through the consumption of material norms and the consumption of time norms. The overhead costs are allocated to components by means of an additional calculation surcharge, that represents 119.05% from the value of direct labour costs. In this case, the basic regulation must apply, in that the total value of the relative cost of the components should not exceed the value of allowable product cost. If this happens, it is essential to search for ways to cut the costs or possibly change the level of the target profit. The relative value of the cost level for the specific components of the cottage are shown in table 3.

Using the second alternative, it is possible to determine the allowable cost as a multiple between the gravity of importance of specific customer preferences and the percentage level of a selected preference according to specific components. But in a case when the total percent of customer preferences for individual components, by quantity function deployment, is higher than 100%, it is better to use alternative 1 (as in this case). Otherwise it would be necessary to consider a reduction in target profit.

In the last stage of the target costing calculation, it is essential to elaborate the functional cost analysis and thereafter suggest some alternatives that will help to identify improvements to lowering the costs and not constraining the product's capacity. Such improvements should also eliminate functions (preferences which

are not demanded by customers) which on the contrary increase the capacity costs. The determined discrepancy between the customer-chosen preferences and real used costs is shown in table 4 and fig. 3.

**Table 4. Functional cost analysis of garden cottage**
*Tabela 4. Analiza kosztów funkcjonalnych domku ogrodowego*

| The customer preferences *Preferencje konsumentów* | The basic components of the garden cottage *Podstawowe elementy domku ogrodowego* [%] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Interior walls *Ściany wewnętrzne* | Floor *Podłoga* | Mansard *Mansarda* | Roof *Dach* | Doors/ /windows *Drzwi/ /okna* | Other parts *Inne części* | Installation package *Pakiet instalacyjny* | Σ |
| P1 (25.6%) | 9.28* | 3.36 | 1.2 | 7.77 | 2.88 | 14.35 | 1.35 | 40.2 |
| P2 (24.9%) | – | 1.12 | – | 10.36 | 0.96 | 11.48 | – | 23.92 |
| P3 (22.6%) | – | – | – | – | 2.88 | – | 0.15 | 3.03 |
| P4 (16.5%) | 9.01 | – | – | 2.59 | 1.92 | – | – | 13.52 |
| P5 (10.5%) | 9.01 | 1.12 | 0.3 | 5.18 | 0.96 | 2.87 | – | 19.44 |
| Σ | 27.3 | 5. | 1.5 | 25.9 | 9.6 | 28.7 | 1.5 | 100 |

* Multiple between the percentage level of allowable cost of component (27.3%) and the percentage level of selected preference according to specific components (34%).
*Wielokrotność pomiędzy procentowym poziomem dopuszczalnych kosztów elementów (27.3%) a procentowym poziomem wybranych preferencji względem określonych elementów (34%).*

C. The results of labour and the plan of rational measures.
The plan of rational measures consists of the following steps:
- summarization and analysis of achieved results, with the use of scientific methods, analysis, synthesis and deduction,
- the assessment of rational measures with the aim of increasing the attraction, the expedience and the competitiveness of the selected product, while the methodology of deduction and scientific abstraction was used.

## Results and discussion – functional cost analyses

On the basis of the functional cost analysis (table 4 and fig. 3), we can conclude that priority preference 1 has the highest share (40.2%) of the allowable cost (when we consider the assurance of the specific preferences of selected product). From the rationalization and optimization point of view, this discrepancy between preference and its share of the costs can be partly eliminated, even though this function is the most important for consumers. The way the cost can be reduced is to reconsider the appropriate supplier that provides the input material – we can search for cheaper suppliers while ensuring the quality level of the material.
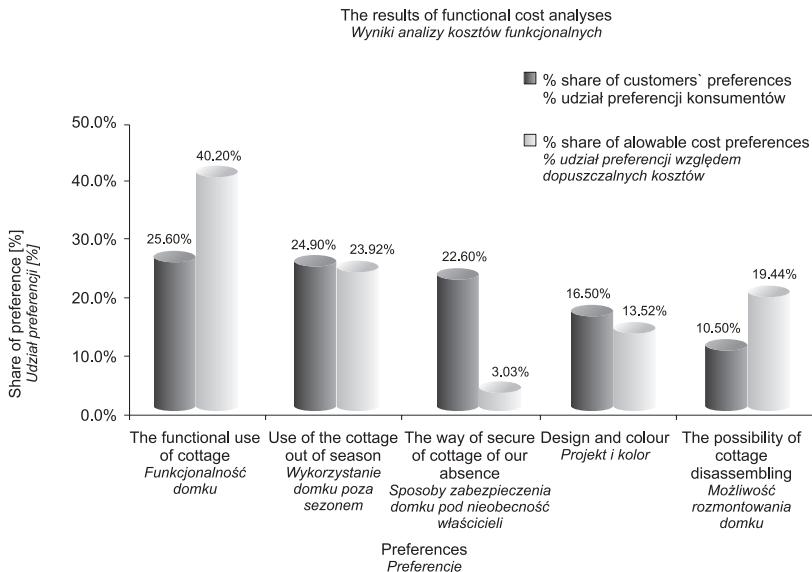
The results of functional cost analyses
*Wyniki analizy kosztów funkcjonalnych*



**Fig. 3. The results of functional cost analyses**
*Rys. 3. Wyniki analizy kosztów funkcjonalnych*

The second highest share of 23.92% of the allowable cost belongs to preference 2. Preferences 2 and 3 are considered along with preference 1 as the crucial reasons for customer interest in the selected product, and if these preferences are absent (or eliminated), the product is not interesting to customers and therefore it is not marketable.

Within the scope of the general rules of value analysis, the company should not consider cutting costs on preference 2, but rather search for ways to reinforce it, which can be strongly shown in preference 3. Quite a high share of the cost falls to preference 5 (19.44%), which is, from the customers' point of view when buying this product, the least important. To ensure this preference, we use 8.94% more of the cost than is required. For this reason it is possible to solve this asymmetry using either of 2 options:

1. The first option consists of the elimination of the whole function because it is preferred by only 10% of customers. With this radical solution it is possible to achieve cuts on costs up to 19.44% out of total costs (ca. € 1, 760). This saving we can use in 2 ways:
   - the first way lies in the ability to strengthen preference 3 (possibly also preference 2), which is preferred by 22.6% (or 24.9%) customers,
   - there is also an option not to invest this saving into any preference, but to keep it. As a result we will accomplish a reduction in the the total costs of the garden cottage. This will lead to an operating decrease in the selling price, and lead to a potential increase in consumption.

2.  The second option consists of partial changes of components that ensure this preference. The idea here is that some parts of the cottage could be delivered disassembled and some parts could be attached to already assembled components. This way potential costs saving could be achieved.

The final effect of this whole customer preference management is to offer customers a product, which best reflects customer requirements with an improvement in those functions of the product (which in this case 89.6% of customers prefer) while keeping the option of lowering the price. There is a condition that the expected positive economic effects exceed reduction of revenues from 10.5% of customers who prefer eliminated functions. If the producer wants to maintain these complementary functions (preferences 4 and 5) in spite of their high share of costs, he must use functional differentiation of the product, which means he will reinforce just these preferences and so diversify his business from competitors. However, additional financial resources are necessary for advertising and sales promotion.

## Conclusions

As a result of the economic crisis and stagnation in demand, Slovakian wood-working businesses are struggling with lowering customer demand for builders and furniture products. Several companies are searching for starting points to move forward from this situation, although the quickest way is to cut costs and lay off their employees. A tool that can discover potential reserves of the company and can also provide solutions for the functional differentiation of the product is Target Costing. The final cost calculation as a modern method of calculation uses the principles of value analysis, while through the tools of functional cost analysis and the tools of quantity-function deployment, it can create suitable conditions for the functional differentiation of the product. This approach can expose defects in the initial phase of the research and the development of the product, while 85 to 90% of capacity costs is a result of decision-making in the phase of preparation. The risk of this approach lies in accurate market research and in determining the relative cost for specific components.

## References

**BPP, Víkendová chatka ALPINA** [2010], www.chatky-sauny.sk (03.2012)
**Borkowski S., Stasiak-Betlejewska R.** [2010]: Analysis of Bent Furniture Production Costs. In: Wood Processing and Furniture Manufacturing: present conditions, opportunities and new challenges. Vyhne: 109–115
**Drury J. C.** [2004]: Management and Cost accounting. London, Business press
**Eschenbach. R.** [2000]: Controlling, Praha, Aspi publishing
**Foltínová A. et al.** [2007]: Nákladový controlling. Bratislava, SPRINT

**Freiberg F., Macík K., Zralý M.** [2000]: Target costing. In: Moderní řízení: měsíčník pro vrcholový a střední management, lektory, personalisty i podnikatele. Economia 35 [10]: 32–37

**Green P. E., Srinivasan V.** [1990]: Conjoint Analysis in Marketing: New Developments With Implications for Research and Practice. The Journal of Marketing 54 [4]: 3–19

**Hitka M., Sirotiaková M.** [2011]: Impact of economic crisis on change of motivation of Ekoltech s. r. o. Filakovo employees. Drewno-Wood 54 [185]: 119–126

**Hitka M., Potkány M. Sirotiaková, M.** [2009]: Proposal of asessment of wood processing company employees. Drewno-Wood 52 [182]: 91–102

**Kaplan R. S., Norton D. P.** [2004]: Strategy maps: Converting Intangible Assets into Tangible Outcomes. Boston: Harvard Business School Press

**Lajoš B.** [2006]: Kalkulácia podľa cieľových nákladov. Acta Oeconomica Cassoviensia [10]: 48–57

**Lyon David W.** [2002]: The price is right (or is it?). Marketing Research 14 [4]: 8–13

**Potkány M.** [2005]: System for establishing intradepartmental prices in slovak wood processing industry. Drvna Industria 56 [4]: 177–188

**Serina P.** [2009]: Moderná kalkulačná metóda - target costing. Podnikanie a konkurencieschopnosť firiem 2009, Bratislava: EU Bratislava [4]: 412–418

**Šatanová A., Gejdoš P.** [2010]: Ekonomika kvality. Zvolen: TU Zvolen

**Šoljaková L.** [2009]: Strategicky zaměřené manažerské účetnictví. Praha, Management press

**Sedliačiková M.** [2011]: Creation of business payment rules and its implementation in a wood working company. Acta Facultatis Xylologiae, [53]: 101–112

**Serina P.** [2005]: Znižovanie nákladov v predvýrobných etapách pomocou kalkulácie cieľových nákladov. Finančný manažér: Bratislava, Slovenská asociácia podnikových finančníkov 6 [1]: 15–19

**Šatanová A., Potkány M.** [2011]**:** Manažérske účtovníctvo. Zvolen: Vyd. TU

**Tumpach M.** [2008]: Manažérske a nákladové účtovníctvo. Edícia Ekonómia

**Weiner Jay L.** [2001]: Applied Pricing Research. Sawtooth Software Conference: 111–122

**Westendorp P. H**. [1976]: Price Sensitivity Meter (PSM) A New Approach to Study Consumer Perception of Price. Venice Congress Main Sessions: 139–167

# UKIERUNKOWANE KOSZTORYSOWANIE W PRZEMYŚLE DRZEWNYM W CELU WSPARCIA POPYTU W OKRESIE ŚWIATOWEJ RECESJI

**Streszczenie**

Obecnie w zakresie kosztorysowania istnieje rosnące zapotrzebowanie na orientację rynkową w działaniach i ukierunkowanie na klienta. Głównym zadaniem kosztorysowania nie jest podanie kosztów produktu, lecz określenie jego ceny, uwzględniającej możliwości nabywcze konsumenta w okresie recesji. W niniejszym opracowaniu zajęto się praktycznym zastosowaniem metodologii ukierunkowanego kosztorysowania, przedstawiając możliwości jej zastosowania w przemyśle drzewnym w zakresie wytwarzania domków

ogrodowych. W kalkulacji tej wykorzystuje się podstawowe zasady analizy wartości, co umożliwia zaproponowanie alternatywnych rozwiązań w obszarze funkcjonalnego i kosztowego zróżnicowania produktu. Podejście to pozwala na wykrycie wad we wczesnym stadium badań nad produktem i jego projektowania, podczas gdy 85-90% kosztów związanych z funkcjonowaniem jest skutkiem decyzji podjętych na tym etapie.

**Słowa kluczowe:** koszt, kalkulacja, preferencje, analiza wartości, analiza kosztów funkcjonalnych, przemysł drzewny