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TRANSFER PRICE AS A FACTOR OF EFFECTIVE ALLOCATION OF COMPANIES RESOURCES

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Abstract:
Resources of a company are usually limited and their effective use contributes significantly to the performance of the company. If we consider the company consisted of more responsibility centers which exchange intermediate products, revenue of the selling center, are at the same time expenditures of the buying center. Therefore, the selected model of transfer pricing in many ways defines the success and interest of the responsibility centers for internal transactions. The most commonly used model of determining transfer pricing is the cost model, although it has certain disadvantages. Transfer pricing is an important motivator of costs reduction, which also contributes to more efficient spending of limited resources, as well to the better business results of the responsibility centers and the whole company.
Keywords: divisionalisation, models, resources, transfer pricing

1. INTRODUCTION

In companies with decentralized decision making, business segments - profit or investment centers are also competing for companies resources. Resources are usually limited and their efficient use contributes significantly to the performance of the company and its operating segments. Profit and investment centers exchange intermediate products, where the revenues of the selling center are at the same time expenditures of the buying center. Thus transfer price is very important, because operating segments in most cases have the possibility of an external supply. Costs are decisive factor in transfer pricing and cost model is most often applied in practice, regardless of its disadvantages. Costs caused by the acquisition and use of company resources can be variable and fixed. Variable costs depend on the use of resources, while the fixed costs or capacity costs are immutable in the short term, regardless of the capacity employment. It is therefore important to use capacity in the productive way and to rationalize the use of resources allocated to the operating segment.

2. DIVISIONALISATION OF THE COMPANY AND ITS OPERATING SEGMENTS - PROFIT AND INVESTMENT CENTERS

In company with decentralized decision making is usually applied divisional organization model. Divisional model requires the definition of relations between the divisions, as well as the implementation of motivational mechanisms. Divisions as decentralized organizational units are relatively independent, since their managers are delegated authority and responsibility for the results of their responsibility centers. Divisions are competing with each other, but at the same time seek to contribute to the corporate profitability through own profitable business. Divisional model is efficient, flexible and quickly responds to the changing demands of consumers with the possibility of direct contact with them. Employees can look at their place and role in the division, they are further motivated through different mechanisms and top management may find it easier to control divisional performance. Regarding divisions as competitors for companies resources, conflict situations may arise between them and top management could lose control over the operating segments. Regardless the aforementioned disadvantages of divisional model, increasing volatility and complexity of environment and technology, as well as growth and development of the company through diversification requires a certain degree of management decentralization and a flexible organizational structure that will adapt with frequent changes in the environment and the company.

Profit center manager has the authority in the field of production and sales and decides which products, at what price and how to produce, sell and distribute. Manager decides on which products will allocate resources and he should establish an optimal relationship between scope, price, quality and production cost. He has no jurisdiction about level of investment. Performances of division and its management are evaluated by comparing realised and budgeted profit. More divisions can create a profit center, as well as one division can consists of more profit centers. The division as a profit center must have a critical mass of revenues and expenses and profits and should realise profit as an indicator of performance of management and its responsibility center. Responsibilities should be delegated to managers, and considering that the manager is responsible for manufacturing and selling, profit center should have recognized external market of inputs and outputs. Also top management should be ready to control profit centers through actual financial results [1].

Investment centers are like small companies, but without legal autonomy, because their managers have authority to make decisions on assortment, pricing, but also the amount and type of investment. However, activities related to obtaining external funding sources, as well as research and development activities remain at the level of top management. An investment center may itself consists of more profit centers. In order to determine the performance of an investment center, the two main indicators are the rate of return on investment (ROI) and the residual income or economic value added EVA (Economic Value Added). ROI has certain shortcomings, but is often used, and as a relative indicator of performance is comparable with different rates. Residual income harmonizes divisional and corporate goals and objectives. In terms of this indicator projects that reject the rate of return above the cost of invested capital are acceptable. The management of a company is responsible to shareholders and other external users of financial statements, while managers of profit and investment centers are responsible to the top management who delegated them the authority.

It is recommended to implement the concept of Balanced Scorecard [2] which has four interconnected perspectives - financial, learning and growth perspective, customers and internal processes, and through them are identified factors that enhance long-term financial performance. By creating a healthy working environment and raising the morale of employees, internal processes are improved, customer satisfaction is increased and finally financial results are improved. Through this short-term financial goals are achieved, strategy is successfully implemented and long-term value of the company is enhanced.

3. INTERMEDIATE PRODUCTS AND TRANSFER PRICING MODELS

In complex companies decentralized organizational units (divisions) exchange intermediate products at prices that are called transfer. The main objective in the determination of transfer pricing is to motivate divisional managers to work in the interest of the whole enterprise.Transfer price determines revenue of selling division and costs of buying division, which is further reflected to the result of divisions and their management. Because of that transfer pricing is often a source conflict situations and managers are very interested in the way of determining transfer prices. Whenever it’s possible, the advantage in the division supply should be given to the internal supply. But if the transfer prices are too high divisional managers will prefer an external supply, which will increase the benefit of buying division, but not the benefit of the company as a whole. Performances of profit centers depends on transfer pricing, and divisional managers are in a position to abuse performance measurement of their responsibility centers through own decisions and activities. Transfer pricing leads to conflict between on one side business decision making and on the other side performance measurement of divisions and their management. Dysfunctional behavior of managers by negotiation about transfer pricing favors the maximization of short-term performance instead of long-term profitability of the company. Regardless of the benefits that divisional managers can achieve through such behavior, in decentralized companies decisions about internal or external supply, or about transfer pricing, should be made on the divisional level. Managers at the highest level do not have the necessary information about markets of intermediate products, variable costs, employed capacities and therefore should not determine the level of transfer pricing. Otherwise the sense of decentralized decision making is lost. Even if the divisional managers make wrong business decisions in terms of selecting sources of supply, the fall of divisional profit and rates of return will negatively affect the performance of operating segments. This will motivate managers to find ways to improve the performance their responsibility centers and own performance, because the amount and character of their awards depends on it.

Table 1 [3]: Reasons for transfer pricing determinition

Reason	Operating segments profit determinition	Cost determinition	Control	Other
Structure (in %)	47	21	23	9

Transfer prices may be market-based, cost-based or negotiated. Transfer pricing level depends on the model of their determination. The market transfer pricing model is recommended as the most objective, because realization of profit and investment centers has the most realistic value. Intermediate products have prices that are applied on the external competitive market. Divisional managers should have a sufficient level of autonomy in making decisions about internal or external supply, depending on what is better for their responsibility center. But we should bear in mind that external markets are not perfect, ie. there is no perfect competition, and managers for the purpose of maximization of short-term interests of their divisions, can harm the short and long-term interests of the company.

Market transfer pricing can be applied when there is a very competitive market of intermediate products, although that happens rarely in the practice. Highly competitive market means that the selling division can sell to external customers as much as possible, and that buying division can be supplied by external suppliers as they wish, without any impact on the price. In this model is also important whether the capacity of selling division are fully employed, because it affects the decision of internal or external supply. If market transfer price does not contribute to long-term corporate profitability, preference should be given to external supplies. Beside the price, in the intermediate products exchange are also important quality, timeliness, specific and sensitive features of the product, and sometimes priority must be given to internal supply. In order to maximize short-term profit of their division, profit center managers take actions that lead to falling long-term corporate profit. The external supplier can offer very low prices with the intention to increase them later, or may insist on a long-term contract to supply at prices that will depend on short-term market. In such situations priority should be given to internal supply, although external purchase will increase profit of operating segments in the short term.

Based on research conducted in 73 German companies is confirmed hypothesis that market-determined transfer prices significantly affect the motivation and efficiency of decentralized organizational units, in comparisson to other non-market transfer pricing model. It is assumed that there is a transparent market of substitutes, that the market price is known and that operating segments have similar strategic importance for the company [4].

Cost transfer pricing are applied when there is no external market for intermediate products or external market prices cannot be used. Transfer pricing can be based on variable or total costs. Cost transfer pricing model is the most common in practice, although it has certain disadvantages. If the transfer price is based on total costs, the product price of the sellig divisions may be uncompetitive in comparison with prices of external suppliers. Then the buying division prefers an external supply, which will negatively affect the selling division, especially if there is no alternative use of production capacity. If the transfer price is based only on costs, the selling division does not generate any markup. Only the division that is the last in the chain and sale to external customers will earn [5]. By using the cost model there is no incentive to control and reduce costs. The costs are transferred from one division to another. The problem can be overcome by establishing the transfer price based on standard costs, in order to prevent uneconomic resource use and transfer of costs of unemployed capacity from the selling division to the buying division through transfer pricing. Transfer price may be equal to the standard cost and standard variable cost and in the literature is mentioned transfer pricing plus markup. Regardless of the these disadvantages easy application of the model make it dominant.

Table 2 [6] : Transfer pricing models in large Canadian companies

Transfer pricing model	Cost based	Market based	Negotiated	Other
Canada (in %)	57	30	7	6

In the report of transfer pricing models in large Canadian companies, most of them implemented cost-based transfer prices In most U.S. studies is stated, as in the Canadian companies, cost based transfer pricing model dominate with 46%, market based model with 33% and negotiated model with 21% [7].

Negotiated transfer prices are used if the market transfer price could decrease the profits of companies and concrete divisions. Then divisional managers through negotiations determine transfer pricing. Transfer prices should be determined in a fair manner acceptable to both negotiating sides, and thereby contribute to the optimization of divisions and companies objectives. Opportunity cost are criterion of accepting transfer pricing whereby opportunity cost of the selling division should be lower than the opportunity cost of buying division, but the outcome will vary depending on employment of capacities. It is also important that negotiators are in the informational symmetric position and that have autonomy in decision-making about sources of supply - internal or external. Transfer prices are determined by negotiations when there is no perfectly competitive markets of intermediate products, and cost model has certain limitations. Buying division has the following options [8]:

a) to accept the offer,
b) to negotiate for lower prices and better conditions,
c) to obtain an offer of external suppliers and negotiate with him, or
d) to reject the offer and make an external supply or not to supply at all.

For the success of the negotiations it is important that divisional managers have all necessary information, that the price could be equal with the opportunity cost of one or both divisions, as well as there is possibility of external purchases or sales. The outcome of negotiations depends on the lowest acceptable transfer prices of selling division and the highest acceptable transfer price of buying division, as well as whether selling division has alternative use of capacity. The top management is also available to divisional managers, but it should be engaged only if the negotiating process doesn't lead to an optimal outcome for both divisions. The negative sides of this model are: [9] that requires more time of divisional managers, interdivisional conflicts are possible, divisional performances depend on the negotiating skills of managers, the engagement of top management can be necessary, suboptimal products quantity can be purchased if the transfer price is above oportunitetnih costs.

Table 3 [10] : Comparison of transfer pricing models

Criterium / Model	Market based	Cost based	Negotiated
Achieves Goal Congruence	Yes, if markets competitive	Often, but not always	Yes
Useful for Evaluating Subunit Performance	Yes, if markets competitive	Difficult, unless transfer price exceeds full cost	Yes
Motivates Management Effort	Yes	Yes, if based on budgeted costs; less incentive if based on actual cost	Yes
Preserves Subunit Autonomy	Yes, if markets competitive	No, it is rule based	Yes
Other factors	No market may exist	Useful for determining full-cost; easy to implement	Bargaining takes time and may need to be reviewed

Based on the table it can be concluded that the best model is market transfer price, but often there is no competitive market for intermediate products. Negotiation model also has positive features, but requires time and skill of divisional management, and sometimes top management engagement. Cost model has minimum advantages, but because of the simplicity is the most common in practice.

4. TRANSFER PRICING INFLUENCE ON RESOURCE ALLOCATION IN DECENTRALIZED ORGANIZATIONAL UNITS

Decentralized decision making has many advantages that are reflected in faster business decision making and responding to requests from the environment, greater motivation and responsibilities of management and other employees at the local level, management training and their progress, etc.. But decentralized management system causes the increase in cost of acquiring information, duplication of some activities, conflicts between divisions that are also competitors for resources of a company, favoring divisional instead of corporate goals, which all reflect to the increase in the total costs and may result in the suboptimal resource allocation.

Transfer price may contribute to the harmonization of divisional and corporate objectives and easier implementation of a strategy. By comparing three models of determining transfer pricing - cost, market and negotiation, we can see how the transfer prices affect divisional revenues, expenditures and results, which further reflects on the motivation of management and its contribution to the achieving goals of their division and whole company.

Table 4: Purchase prices, variable and fixed costs per unit for both divisions

Cost / Division	Transportation	Refinery
Purchase price	15 $	27 $
Variable cost	3 $	10 $
Fixed cost	4 $	5 $
Total	22 $	42 $

In this example customized to [11] there are two divisions - Transportation of crude oil and Refinery. In this table are given purchase prices and variable and fixed costs per unit for both divisions.

Table 5: Comparison of transfer prices level according to different models

	Market based	Cost based	Negotiated
Transfer price (in $)	27	24,2	24,2 - 27

In this example, the market transfer price is $ 27, by which the Refinery buys crude oil and processes it into gasoline. To determine the transfer price in the cost-model, which is usually used in practice, we can assume that the transfer price represents 110% of the total cost of Transportation, which means that it would amount to $ 24.2 ($ 22 * 110%). According to the negotiated transfer price model would have been in the range of 24.2 to $ 27.

Assuming that Refinery buys 1000 barrels of crude oil and processes it in 500 gallons of gasoline we can determine the operating profit for each of the models, given that transfer pricing may vary. Selling price of Transportation Division is at the same time purchase price of Refining Division.

Market selling price of gasoline gallon is $ 71. Regarding of the negotiating model has price range, in the table is not quantified operating profit to be made using this model.

Table 6: Calculating operating profit for divisions

	Market based transfer price		Cost based transfer price	
	Transportation	Refinery	Transportation	Refinery
Revenue	27000 (27$*1000barr.)	35500 (71$ * 500 gall.)	(24,2$*1000barr.)	35500 (71$*500 gall.)
Operating expenditures	22000	34500	22000	31700
-Purchase price - Variable cost - Fixed cost	15000 3000 4000	27000 5000(10$*500 g.) 2500 (5$ * 500 g.)	15000 3000 4000	24200 5000(10$*500g) 2500(5$*500 g.)
Operating profit	5000	1000	2200	3800
Total profit for both divisions	6000		6000	

From the example in the table we can conclude that the total operating profit for both divisions is the same regardless of the method of transfer pricing, but redistribution of profits between divisions differs depending on the selected model. Divisional managers are very interested in maximizing profits and the realized rate of return on investment, as a criteria for evaluating the success of profit or investment centers, and the basis for rewarding its management. Division participation in companies resources that are generally limited, will depend on their performance.

The goal of any manager is to maximize the difference between revenues and expenditures. Transfer prices of the selling division are a factor of realised revenues and tend to their upper limit. At the same time transfer prices are a factor of expenditures in the buying division and tend to their lower limit. This explains why transfer prices are source of conflict situations. In fact most of the divisions have the option of an external supply, which may increase short-term divisional profit, not corporate profit. Divisional management business decisions and their effectiveness in determining appropriate transfer prices depend on the degree of division capacity employment. If the production capacities of the selling division are not enough employed, management can attract customers by selling price that doesn't include fixed costs. In this situation, buying division has an advantage and possibility to choose sources of supply (internal or external), which through transfer pricing reflects the level of expenses and profit of buying division.

5. CONCLUSIONS

Decentralized decision making has many advantages, but causes the increase of costs of acquiring information, conflicts between divisions that are at the same time competitors for companies resources, as well as favoring divisional instead of corporate goals, which all reflect the increase of total costs and may result in suboptimal allocation of companies resources. Each capital has its price and own capital too, because there is always the possibility of its alternative use. In particular, management should be cautious with investing borrowed capital, because the rate of return of particular project should be higher than the cost of borrowed capital in order to make investment sense. Transfer prices affect divisional revenues, expenditures and results, which further reflects on the motivation of management and its contribution to achieving goals of their division and whole company. More successfull divisions have greater participation in the resource allocation and thus divisional managers are interested in transfer pricing model that will be applied – market based, cost based or negotiated model. Regardless of its disadvantages, cost based transfer pricing model is the most common in pracitice.

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