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Supplier Contribution to Profit Calculation and Supplier's Expense Levels

Suppliers of goods present a very important cost object for trading companiessuch as retail. There is, however, no theoretical explanation as to how to calculate a contribution to profits generated from an individual supplier. This calculation is the subject of the paper. There is no calculation that shows how goods, provided from the supplier, create profit through gross margin and how the supplier`s behavior influences the costs (like delivery terms, costs of keeping specific goods fresh…). The final costs further decrease the profit generated by suppliers. As they have long found it illogical to calculate contribution to profit from suppliers in a production company, trading companies have long ignored it, as well. The Activity Based Costing (ABC), as the up-to-date system, still does not possess the cost hierarchy for suppliers as the cost object. The aim of the paper is to present a proposal for creating the cost hierarchy for suppliers in a trade company through creating a theoretical financial model as a method. The model also offers a theoretical explanation of how to calculate the contribution from a supplier or a group of suppliers. It is based on empirically evident activities in any supermarket or hypermarket, which makes it possible to create explanatory theoretical research.

Keywords: supplier, level of costs, contribution, contribution per supplier, activity based costing

1. Introduction

The calculation of the contribution to profit per supplier may sound strange. In a production company it would surely make no sense. In this type of the company, supplier provides the part of final product or some production resource. This will create expenses. However, in a trading company, the goods bought from a specific supplier would be directly resold at a higher price than purchased and will generate a gross margin. The margin would differ per similar goods, or even for the same goods purchased from different suppliers. Besides the costs of the goods sold, the suppliers will also generate different costs for manipulation, shelf exposure or promotion of their goods. Due to this fact, the contribution to the profit generated by a supplier should be calculated as the difference between the price, at which the supplier`s goods are resold, and the costs of goods resold further reduced for other expenses that can be allocated to the individual supplier.

For example, a large retail company could have a vast number of suppliers for sweets, non-alcoholic beverages, alcoholic beverages, etc. Some of those suppliers will generate higher contribution to profit while other will contribute less. Each supplier of goods can be more or less attractive, average prices per supplier can be higher than average, but accepted by market. On the other side, working with some suppliers can generate lower level of the expenses in absolute or relative terms. The fair question is how expenses can be connected with suppliers as cost objects in the retail company?

The calculation of the contribution achieved per supplier for a trading company is the challenge to which the management accountants should provide the answer. The calculation of contribution to profit by individual supplier or supplier groups and identifying reasons for contribution level can improve the management capacity of the trading company. If expenses of activities caused by operations with supplier and its goods can be connected with the supplier by causality, the new possibilities for measuring performances and controlling will be generated. The contribution to profit generated by an individual supplier can be calculated. This is in line with the fact that management accounting is designed to influence the behavior of managers and employees (Horngren at al., 2009, p. 30) – especially since the effect of profit on the supplier`s behavior is now clearly visible

and can be managed. The management accounting is often focused on individual parts or segments of the business (Drury, p. 5) – suppliers in this case appear as a rarely investigated subject for a trading company. The subject of research in the article is defining a theoretical explanation for the calculation of the supplier`s contribution to profitability for trading companies. A retail company has been taken as an example of trading companies in general.

The aim of the research is to define a proposal of the cost hierarchy for suppliers in the trading company. Again, a supermarket was taken as an example of a trading company. Defining the cost hierarchy using the ABC methodology would make it possible to process suppliers as the cost object.

The hypotheses is that the levels of expenses for suppliers can be defined by an analogy with the products: the level of the individual supplier, the level of the supplier group, the supplier support level and the level of the retail object.

The hypotheses will be tested through a defined theoretical financial model. The model will not be based on the empirical research. However, the activities and types of supplier groups are defined as being evident in the real life. Entering any supermarket will lead to activities used in the theoretical financial model as being essential and/or core ones. In other words, the theoretical financial model is based on real life activities, which can be found in any food supermarket.

The theoretical financial model is a chosen method for the explanatory research presented in the article. It makes possible a synthesis of the facts from the real life into a theoretical frame. The empirical research for testing the theoretical explanation is left for a future article.

2. Activities Connected with the Suppliers

M. Porter has showed that the value for the customer is transferred from supplier to the end consumer within the value chain which connects different companies up to the final customer. (Porter, 1985, p. 34-36) The trading company can easily be part of the value chain. Part of the activities in the retailing company, as example of trading company that will be used in this article, can be connected with suppliers. For example, transport activities will be directly connected with supplier if the transport from factory to retail is a responsibility of the retailer. The other value-adding activities will include positioning the supplier`s goods on the shelves, keeping them in freezers or cooling them for keeping the value of the goods intact. In some cases, the retailer will repack the goods into trading size or even provide the additional technological increase in value – like milling the coffee beans in store for keeping the freshness. All these activities are connected with the supplier`s goods and with keeping their original value, adding the location more favorable for the customer, providing the information about the supplier`s goods, etc.

It can be concluded that inside the retail company, there is generally a large number of the activities connected with the goods of the suppliers, such as: warehousing, transport to the shelves, billing the goods, advertising activities, ordering the goods from the suppliers, etc. These activities are part of the internal value chain. (Porter, 1990, p. 41) An appropriately organized ABC system provides information for monitoring and evaluation of activities to management. (Stefanović, 2010, p. 29-30) The complexity of the ABC system is connected with various procedures which can result in a higher quality management. One procedure is compiling the list of activities for each cost object. (Kaličanin&Knežević, 2013, p. 107) Suppliers can potentially be such cost object.

Having the value of activity`s expenses connected with the supplier and its goods will provide for the potential for better management. When expenses of the activities connected with an individual supplier are compared with the revenues achieved by selling its goods, it will be possible to find out the reasons of either low or high level of the individual supplier contribution to the overall profit. As a result, the relationship with the supplier can be better managed leading to higher level of generated profit.

If cost drivers that initiate the expenses of activities are connected with the individual supplier and its goods, the expenses could be defined for the supplier as a cost object. In this manner, the expenses connected with joint resources can be allocated to the individual supplier as for product or customer by using the activity-based costing. The costs of keeping the goods frozen in the retail shop for several different suppliers are one example of this joint resource usage.

3. Defining the Levels of Expenses Connected with Suppliers

R. Cooper had defined the four levels of activities in the cost hierarchy for product as cost object in 1990: 1. activities on the level of unit of product, 2. activities on the batch product level, 3. activities on the level of supporting the product and 4. activities on the level of a factory. (Bromwich, 1997, p. 44) The issues connected with finding the proper allocation method, defined as finding the proper cause of costs, all with the aim of allocating the costs to product per causality led to this proposal. Due to activity based costing, the activity of the production line preparation could be allocated to specific product that has caused the preparation of the line. The expense of supporting the product by educating the customer how to use it, could also be done properly if the cost driver of the activity connected with the product can be determined.

The procedure is, firstly, to allocate the expenses to the activity cost pool. In the second step, the number of cost drivers of the activity is determined. In the third step, expense per cost driver is calculated by dividing the expenses from cost pool by the number of cost drivers. Finally, the expense per cost driver is multiplied with the number of cost drivers connected with the individual product to reach the real expenses connected with the product without breaking the causality.

In some articles, it was even discussed how specific types of the expenses, like environmental expenses, can be included into the product cost hierarchy. (Kreuze&Newell, 1994, p. 30-33)

In the literature, proposals of the cost hierarchies for other cost objects like customers or brands can also be found. For example, G. Foster and M. Gupta proposed the cost hierarchy for customers: 1. cost level connected with individual customer or transaction, 2. cost level connected with customer, 3. cost level connected with the group of customers and 4. the level of marketing support. The same hierarchy can be used for distributors as well, since they are essentially buyers from the company perspective. The authors have also proposed the hierarchy of costs for a brand: 1. individual unit level costs for products under the brand, 2. the batch level costs for products under the brand, 3. product line or brand expenses, 4. other product line expenses under the brand but for extended product range under the brand, 5. brand level cost of general support provided over the brand. (Foster&Gupta, 1994, p. 43-77, p. 86, 88) These hierarchies make it possible to calculate the contribution achieved per customer, distributor or brand. Another cost hierarchy for customers given in literature is: 1. customer output unit-level cost, 2. customer batch-level costs, 3. customer sustaining costs, 4. distribution-channel costs, 5. corporate-sustaining costs. (Horngren at all, 2009, p. 535-536)

Knowledge about the cost hierarchies is continually enlarged. Newly presented hierarchies for product as cost object are breaking the support level for the product into different categories, as well as the support on the general level. Product, customer and channel sustaining activities are included as independent levels of expenses introduced into the product cost hierarchy. The factory level expenses are excluded, but some new levels are added as business support and other support activities. (Atkinson at all, 2007, p. 56-62)

If the analogy based on the initial product hierarchy of R. Cooper is used, the hierarchy of suppliers as cost object could look a sfollows:

1. activities connected with individual supplier,
2. activities connected with groups of suppliers,
3. activities connected with support to the suppliers,
4. activities of the support on the level of retail object.

The general remark could be given that the hierarchy could have more levels such as a business level or different levels of the customer support. If the activity-based costing can be used for the proposed four levels, it can easily be splitted up into a more detailed hierarchy.

In order to present how the activities connected with the suppliers can be allocated to the proposed levels, the theoretical financial model is designed and presented in the following part of the paper. In order to keep the necessary simplicity, just the activities that can be considered as the most important activities connected with suppliers are presented in the model. An unspecific retail company is used in this theoretical example.

4. The Example of Allocation of the Expenses to the Suppliers in the Retail

Revenues can be relatively easy connected with individual supplier`s goods. This is due to fact that revenues are generated by selling the goods brought from an individual supplier. Individual codes provided for each product make it possible to generate this connection by using modern business software.

Table 1: Revenues by selling the supplier's goods in €

No	Description	Values
1	Swislion	2,000,000
2	Banini	1,500,000
3	Matijevic	3,000,000
4	Zlatiborac	2,500,000
5	Imlek	2,700,000
6	Šabačka mlekara	1,800,000
7	Frikom	1,700,000
8	Premia	1,500,000
	Total Revenues	**16,700,000**

The activities on the first level of expenses are: transport of the goods from the supplier, downloading the goods from the trucks into the warehouse and the return of the goods if not delivered as contracted. For some suppliers, the delivery is performed by retailer's two vans while others include the delivery up to the costs of the goods sold. The return of the goods is also performed using the retailer`s vans. For the first activity, the cost driver is ton-kilometre as well as for the return of the goods. The cost pool consists of salaries, fuel, depreciation of vehicles, maintenance and repair. Ton-kilometres created by individual suppliers identify the cause-effect relationship with an individual supplier. The allocation of expenses for unloading the goods from the trucks into the warehouse is done by using working hours of forklift. The cost pool includs the salaries of the fork lift operator as well as helping workforce, depreciation of forklift, maintenance and fuel. With the information about the hours of work for unloading the goods into the warehouse, the costs can be allocated to each supplier.

Costs of goods sold are also calculated into the first level of expenses. The average gross margin is 15% for Swislion, 25% for Banini and Matijevic, 23% for Zlatiborac, 10% for Imlek, 13% for Šabačka mlekara, 16% for Frikom and 17% for Premia. This gross margin is achieved for all types and sizes of goods resold after being acquired from these suppliers. The total expenses of the first level are presented in the following tables. One should bear in mind that real name companies as suppliers are used in the presented theoretical model for illustration purposes.

Table 2: Allocation of transport activity expenses in €

No	Description	Values
1	**Total expenses**	**39,000**
	Fuel	20,000
	Time depreciation of vehicle	10,000
	Salaries	6,000
	Maintenance and repair	3,000
2	**Total tone kilometers**	**10,800**
3	**Cost per tone kilometer**	**3.61**
	Tone kilometers for Banini	2,800
	Tone kilometers for Imlek	6,000
4	**Activity expense for Banini**	**10,111**
5	**Activity expense for Imlek**	**21,667**

Table 3: Return of goods to supplier in €

No	Description	Values
1	**Cost per tone kilometer**	**3.61**
2	**Tone kilometers per supplier**	**2,000**
	Matijevic	1,200
	Zlatiborac	500
	Imlek	300
3	**Activity expense per supplier**	**7,222**
	Matijevic	4,333
	Zlatiborac	1,806
	Imlek	1,083

Table 4: Unloading the goods to warehouse in €

No	Description	Values
1	**Expense of unloading the goods**	**24,000**
	Salaries of support and fork lift workers	12,000
	Depreciation of fork lift	3,000
	Salaries of personal on fork lift	4,000
	Fuel for forklift	2,000
	Maintenance of fork lift	3,000
2	**Hours for unloding the goods**	**7,400**
3	**Expense per unloading hour**	**3.24**
	Swislion - unloading hours	700
	Banini - unloading hours	800
	Matijevic - unloading hours	1,100
	Zlatiborac - unloading hours	1,300
	Imlek - unloading hours	1,400
	Šabačka mlekara - unloading hours	1,200
	Frikom - unloading hours	400
	Premia - unloading hours	500
4	**Expense per supplier**	**24,000**
	Swislion	2,270
	Banini	2,595
	Matijevic	3,568
	Zlatiborac	4,216
	Imlek	4,541
	Šabačka mlekara	3,892
	Frikom	1,297
	Premia	1,622

Table 5: The total of first level expenses in €

No	Description	Values
1	**Costs of goods sold**	**13,669,000**
	Swislion	1,700,000
	Banini	1,125,000
	Matijevic	2,250,000
	Zlatiborac	1,925,000
	Imlek	2,430,000
	Šabačka mlekara	1,566,000
	Frikom	1,428,000
	Premia	1,245,000
2	**Transport of goods for supplier**	**31,778**
	Banini	10,111
	Imlek	21,667
3	**Downloading into the warehouse**	**24,000**
	Swislion	2,270
	Banini	2,595
	Matijevic	3,568
	Zlatiborac	4,216
	Imlek	4,541
	Šabačka mlekara	3,892
	Frikom	1,297
	Premia	1,622
4	**Return of goods**	**7,222**
	Matijevic	4,333
	Zlatiborac	1,806
	Imlek	1,083

The activities on the second level are filling the shelves, cooling shelves and freezers; keeping goods cold and keeping goods frozen. These activities are done for groups of suppliers depending on the fact whether goods can be sold while being on the normal temperature or have to be kept cold or frozen. Salaries of personnel who move the goods into the sales space and depreciation of transport devices constitute the cost pool for the first activity. The time driven activity based costing is used to allocate the expenses of this activity. (Kaplan&Andersen, 2007) Twenty workers fill the shelves and the cooling and freezing shop facilities for 22 working days, 12 months a year. The total capacity in hours is 39.600. The time used for filling the sales space with the goods of each supplier is taken as a cost driver and the expenses of the activity pool are allocated according to that.

As mentioned, there are three groups of suppliers. For the first group, usual shelves are used to present the goods to customers. The second group needs its goods to be cooled. In this group are meat producers and diaries. The third group needs its goods to be frozen until the moment of sales. For the last two groups, activities of cooling and keeping the goods frozen are needed. The cost pools for both groups have the same types of costs – electricity, depreciation&maintenance of cooling equipment or freezers and salaries of people responsible for this part of sales space. For the suppliers whose goods need cooling, m²days are determined as cost driver. This is due to the fact that goods of each supplier are taking the m² of the shelf space for a certain number of days. Similarly, the cost driver for the suppliers whose goods needs to be frozen is m³days.

In the following tables, the allocation of the second level activities is presented.

Table 6: Expenses for filling the shelves, coolers, freezers

No	Description	Values
1	**Total expenses of the activity**	**38,000**
	Salaries of personal	28,000
	Depreciation of transport devices	10,000
2	**Capacity cost rate per work hour**	**0.96**
	Number of employees	20
	Time per employee in hours	7.5
	Total hours-22 working days in month	22
	Total available hours in a year	39,600
3	**Hours for putting the goods in shop**	**39,600**
	Swislion	5,000
	Banini	3,600
	Matijevic	4,000
	Zlatiborac	3,500
	Imlek	2,500
	Šabačka mlekara	4,500
	Frikom	10,000
	Premia	6,500
4	**Activity expense per supplier**	**38,000**
	Swislion	4,798
	Banini	3,455
	Matijevic	3,838
	Zlatiborac	3,359
	Imlek	2,399
	Šabačka mlekara	4,318
	Frikom	9,596
	Premia	6,237

Table 7: Expenses for keeping goods cold in €

No	Description	Values
1	**Total cost of the activity**	**86,000**
	Electricity for cooling	20,000
	Depreciation of cooling equipment	50,000
	Maintenance of cooling equipment	10,000
	Salaries of people working in cooling	6,000
2	**M2 Days available**	**1,750,000**
	M3 of freezers space	5,000
	Days of retail object work	350
3	**Expense per M2 Days available**	**0.05**
4	**M2 Days used for specific supplier**	**1,750,000**
	Matijevic	612,500
	Zlatiborac	525,000
	Imlek	437,500
	Šabačka mlekara	175,000
5	**Activity expense per supplier**	**86,000**
	Matijevic	30,100
	Zlatiborac	25,800
	Imlek	21,500
	Šabačka mlekara	8,600

Table 8: Expenses for keeping goods frozen in €

No	Description	Values
1	**Total cost of the activity**	**68,000**
	Electricity for keeping goods frozen	35,000
	Depreciation of equipment	20,000
	Maintenance of equipment	7,000
	Salaries on department	6,000
2	**M3 Days available**	**315,000**
	M3 of frozen goods equipment	900
	Days of retail object work	350
3	**Expense per M3 Days available**	**0.22**
4	**M3 Days used**	**315,000**
	Frikom	150,000
	Premia	165,000
5	**Allocation of the activity expense**	**68,000**
	Frikom	32,381
	Premia	35,619

Table 9: The second level expenses in €

No	Description	Values
1	**Filling shelves, vitrines, freezers**	**38,000**
	Swislion	4,798
	Banini	3,455
	Matijevic	3,838
	Zlatiborac	3,359
	Imlek	2,399
	Šabačka mlekara	4,318
	Frikom	9,596
	Premia	6,237
2	**Keeping goods cold**	**86,000**
	Matijevic	30,100
	Zlatiborac	25,800
	Imlek	21,500
	Šabačka mlekara	8,600
3	**Keeping goods frozen**	**68,000**
	Frikom	32,381
	Premia	35,619

The activities on the level of the supplier support are: advertising campaigns for private label, advertising campaigns for individual suppliers and disposal of goods after the allowed usage date. The retailer has developed a private label. Banini, Zlatiborac and Premia are suppliers that partly sell under the private label. 30% of the revenues generated by selling the goods of the first company are sold under private label, while the percentages for the second and third amount to 40% and 50%, respectively. The overall advertisement expense for the private label is 1 million EUR. The total sales of the private label are 2.2 million and the share of supplier in the total private label sale is used as a cost driver for this activity. Simply, the private label has influenced the value of sales for the individual supplier`s goods.

The retailer has also advertised the goods of other suppliers, who do not sell under the private label, when needed. In the cost pool of this activity are allocated: invoices from television and radio stations, invoices for creation of videos, radio commercials and salaries of the retailer`s advertising department. The number of advertising campaigns was used as a cost driver and the cost driver rate was calculated based on this. The number of campaigns connected with the goods of the individual supplier was multiplied with the cost driver rate in order to calculate expenses of this activity connected with the individual supplier.

Depending on the attractiveness of the supplier`s goods, some of the goods will exceed the expiration date. Due to this, the retailer will have to dispose of these goods. Invoices for destruction of goods and salaries of the personnel in charge of these goods are in the cost pool. The number of disposals is the cost driver and after calculating the cost driver rate, expenses are allocated to each supplier.

The allocation of the third level activity expenses per each supplier is presented in the following tables.

Table 10: Allocation of expenses for advertising in €

No	Description	Values
1	**Total advertising expense**	**700,000**
	Invoices from television, radio stations	500,000
	Invoices for creation of videos	150,000
	Salaries of marketing office	50,000
2	**Number of advertising campaigns**	**50**
3	**Activity expense per campaign**	**14,000**
	Swislion	6
	Banini	7
	Matijevic	8
	Zlatiborac	10
	Imlek	3
	Šabačka mlekara	8
	Frikom	4
	Premia	4
4	**Activity expense per supplier**	**700,000**
	Swislion	84,000
	Banini	98,000
	Matijevic	112,000
	Zlatiborac	140,000
	Imlek	42,000
	Šabačka mlekara	112,000
	Frikom	56,000
	Premia	56,000

Table 11: Expenses for disposal of goods in €

No	Description	Values
1	**Total expense of the activity**	**36,500**
	Invoices for destruction of goods	30,000
	Salaries of responsible personnel	6,500
2	**Number of disposals**	**15**
3	**Expense per disposal**	**2,433**
	Matijevic	8
	Zlatiborac	2
	Imlek	3
	Šabačka mlekara	2
4	**Activity expense per supplier**	**36,500**
	Matijevic	19,467
	Zlatiborac	4,867
	Imlek	7,300
	Šabačka mlekara	4,867

Table 12: The total of third level expenses in €

No	Description	Values
1	**Advertising campaign-private label**	**1,000,000**
	Banini	204,545
	Zlatiborac	454,545
	Premia	340,909
2	**Advertising campaigns for suppliers**	**700,000**
	Swislion	84,000
	Banini	98,000
	Matijevic	112,000
	Zlatiborac	140,000
	Imlek	42,000
	Šabačka mlekara	112,000
	Frikom	56,000
	Premia	56,000
3	**Disposal of over the date products**	**36,500**
	Matijevic	19,467
	Zlatiborac	4,867
	Imlek	7,300
	Šabačka mlekara	4,867

The fourth level activities are the following: providing the shelf price for each goods of the supplier with corresponding price changes, orders of delivery administration, complains needed to be processed by administration and cash register service. In the cost pool of the price exposure and price change activity are expenses of salaries and price changing machines that are regularly replaced a couple of times during the year. The event of price change or the original price exposure is the cost driver for which the cost driver rate is calculated. The number of exposures and price changes per supplier is used to determine the expenses of the activity connected with each supplier.

Salaries of personnel, depreciation of equipment and telephone/internet expenses are in the cost pool of the delivery administration and complaints as a supplier activity. The number of delivery orders and complaints to the suppliers is the cost driver. Upon calculating the cost driver rate, the expenses are allocated per each supplier. thecost pool for the cash register service includes salaries of personnel behind the cash register and packaging personnel (€100.000), depreciation (€50.000), maintenance and repair of cash registers (€20.000). Revenues from sales of goods of each supplier are used as cost drivers and expenses are allocated to suppliers accordingly for the cash register service.

The fourth level expenses are presented in the following tables.

Table 13: Expenses connected with price changes in €

No	Description	Values
1	**Total expense**	**225,000**
	Salaries of personal	200,000
	Price changing machines	25,000
2	**Number of price changes**	**135,000**
	Swislion	21,000
	Banini	14,000
	Matijevic	10,000
	Zlatiborac	30,000
	Imlek	12,000
	Šabačka mlekara	18,000
	Frikom	12,000
	Premia	18,000
3	**Expense per price change**	**1.67**
4	**Activity expense per supplier**	**225,000**
	Swislion	35,000
	Banini	23,333
	Matijevic	16,667
	Zlatiborac	50,000
	Imlek	20,000
	Šabačka mlekara	30,000
	Frikom	20,000
	Premia	30,000

Table 14: Delivery administration&complaints (€)

No	Description	Values
1	**Total expense**	**33,000**
	Salaries of personal	20,000
	Telephone and internet	8,000
	Deprecitaion	5,000
2	**Number-deliveries and complains**	**1,450**
3	**Activity expense per cost driver**	**22.76**
	Swislion	270
	Banini	50
	Matijevic	200
	Zlatiborac	150
	Imlek	200
	Šabačka mlekara	350
	Frikom	140
	Premia	90
4	**Activity expense per supplier**	**33,000**
	Swislion	6,145
	Banini	1,138
	Matijevic	4,552
	Zlatiborac	3,414
	Imlek	4,552
	Šabačka mlekara	7,966
	Frikom	3,186
	Premia	2,048

Table 15: The total of fourth level expenses in €

No	Description	Values
1	**Presenting the price of products**	**225,000**
	Swislion	35,000
	Banini	23,333
	Matijevic	16,667
	Zlatiborac	50,000
	Imlek	20,000
	Šabačka mlekara	30,000
	Frikom	20,000
	Premia	30,000
2	**Delivery and complains administ.**	**33,000**
	Swislion	6,145
	Banini	1,138
	Matijevic	4,552
	Zlatiborac	3,414
	Imlek	4,552
	Šabačka mlekara	7,966
	Frikom	3,186
	Premia	2,048
3	**Cash register service**	**170,000**
	Swislion	20,359
	Banini	15,269
	Matijevic	30,539
	Zlatiborac	25,449
	Imlek	27,485
	Šabačka mlekara	18,323
	Frikom	17,305
	Premia	15,269

All these allocations would not have any significance if the report about the achieved contribution to profit generated per each supplier could not be created.

5. The Report about Supplier`s Contribution to Profit

The contribution per supplier is the difference between the revenues of a supplier`s goods and costs of goods sold including the expenses that could be allocated to the individual supplier by using cost drivers. It can be concluded that the term contribution per supplier is constructed by using the same principles as contribution of the customer or the product.

In the next table, the calculation of overall contribution is presented. The suppliers in the previous model are grouped in four groups in the same manner as they would be in practice. In this manner it is possible to compare the contribution of each group of suppliers as well as to show how much an individual supplier contributed to the group and to the overall contribution of all suppliers.

Table 16: Contribution per Supplier in €

No	Description	Swislion	Banini	Conditors	Matijevic	Zlatiborac	Meat
1	**Revenues**	**2,000,000**	**1,500,000**	**3,500,000**	**3,000,000**	**2,500,000**	**5,500,000**
2	Cost of goods sold	1,700,000	1,125,000	2,825,000	2,250,000	1,925,000	4,175,000
3	**Gross margin**	**300,000**	**375,000**	**675,000**	**750,000**	**575,000**	**1,325,000**
4	**Activities connected with individual supplier**	**2,270**	**12,706**	**14,976**	**7,901**	**6,022**	**13,923**
5	Transport of goods for supplier		10,111	10,111			-
6	Unloading the goods into the warehouse	2,270	2,595	4,865	3,568	4,216	7,784
7	Return of goods			-	4,333	1,806	6,139
8	**Contribution after covering of the first level**	**297,730**	**362,294**	**660,024**	**742,099**	**568,978**	**1,311,077**
9	**Activities connected with the groups of suppliers**	**4,798**	**3,455**	**8,253**	**33,938**	**29,159**	**63,097**
10	Filling the shelves, vitrines and freezers	4,798	3,455	8,253	3,838	3,359	7,197
11	Keeping goods cold			-	30,100	25,800	55,900
12	Keeping goods frozen			-			-
13	**Contribution after covering of the first two levels**	**292,932**	**358,840**	**651,771**	**708,161**	**539,820**	**1,247,980**
14	**Activities connected with support to the suppliers**	**84,000**	**302,545**	**386,545**	**131,467**	**599,412**	**730,879**
15	Advertising campaign for private label		204,545	204,545		454,545	454,545
16	Advertising campaigns for specific suppliers	84,000	98,000	182,000	112,000	140,000	252,000
17	Disposal of products over the date of allowed usage			-	19,467	4,867	24,333
18	**Contribution after covering of the first three levels**	**208,932**	**56,294**	**265,226**	**576,694**	**(59,592)**	**517,102**
19	**Activities of support on the level of retail object**	**61,504**	**39,741**	**101,245**	**51,757**	**78,863**	**130,620**
20	Providing the price of products for customers	35,000	23,333	58,333	16,667	50,000	66,667
21	Delivery administration and complains	6,145	1,138	7,283	4,552	3,414	7,966
22	Cash register service	20,359	15,269	35,629	30,539	25,449	55,988
23	**Contribution from supplier**	**147,428**	**16,554**	**163,981**	**524,937**	**(138,455)**	**386,481**

No	Description	Imlek	Šabačka mlekara	Dairy	Frikom	Premia	Frozen food	Total
1	**Revenues**	**2,700,000**	**1,800,000**	**4,500,000**	**1,700,000**	**1,500,000**	**3,200,000**	**16,700,000**
2	Cost of goods sold	2,430,000	1,566,000	3,996,000	1,428,000	1,245,000	2,673,000	13,669,000
3	**Gross margin**	**270,000**	**234,000**	**504,000**	**272,000**	**255,000**	**527,000**	**3,031,000**
4	**Activities connected with individual supplier**	**27,291**	**3,892**	**31,182**	**1,297**	**1,622**	**2,919**	**63,000**
5	Transport of goods for supplier	21,667		21,667			-	31,778
6	Unloading the goods into the warehouse	4,541	3,892	8,432	1,297	1,622	2,919	24,000
7	Return of goods	1,083		1,083			-	7,222
8	**Contribution after covering of the first level**	**242,709**	**230,108**	**472,818**	**270,703**	**253,378**	**524,081**	**2,968,000**
9	**Activities connected with the groups of suppliers**	**23,899**	**12,918**	**36,817**	**41,977**	**41,856**	**83,833**	**192,000**
10	Filling the shelves, vitrines and freezers	2,399	4,318	6,717	9,596	6,237	15,833	38,000
11	Keeping goods cold	21,500	8,600	30,100			-	86,000
12	Keeping goods frozen			-	32,381	35,619	68,000	68,000
13	**Contribution after covering of the first two levels**	**218,810**	**217,190**	**436,000**	**228,726**	**211,522**	**440,248**	**2,776,000**
14	**Activities connected with support to the suppliers**	**49,300**	**116,867**	**166,167**	**56,000**	**396,909**	**452,909**	**1,736,500**
15	Advertising campaign for private label			-		340,909	340,909	1,000,000
16	Advertising campaigns for specific suppliers	42,000	112,000	154,000	56,000	56,000	112,000	700,000
17	Disposal of products over the date of allowed usage	7,300	4,867	12,167			-	36,500
18	**Contribution after covering of the first three levels**	**169,510**	**100,323**	**269,834**	**172,726**	**(185,387)**	**(12,661)**	**1,039,500**
19	**Activities of support on the level of retail object**	**52,037**	**56,289**	**108,326**	**40,492**	**47,318**	**87,809**	**428,000**
20	Providing the price of products for customers	20,000	30,000	50,000	20,000	30,000	50,000	225,000
21	Delivery administration and complains	4,552	7,966	12,517	3,186	2,048	5,234	33,000
22	Cash register service	27,485	18,323	45,808	17,305	15,269	32,575	170,000
23	**Contribution from supplier**	**117,474**	**44,034**	**161,508**	**132,234**	**(232,705)**	**(100,471)**	**611,500**

It is possible to find out which suppliers or supplier groups are positive, which are negative and why. The purpose of this article is not to make the analysis, but to present the way in which the contribution can be calculated. It is clear that many different ratios, visualization and analyses of the revenues or expenses structure can be implemented. The share of the supplier in overall contribution achieved by all suppliers can be used for the analyses as well.

This type of calculation can be used together with established techniques auch as direct product profitability. (Ward, 1993, p. 147-149)

6. Proposals connected with the research

The theoretical financial model presents the method in which it can be possible to calculate the profitability of suppliers by using Activity Based Costing. It is the result of using empirically evident facts and finding scientific solution for the way in which these facts can be reorganized in a manner which makes it possible to calculate the supplier`s contribution to profit. The originally proposed hierarchies of costs for products, brands, customers within ABC followed a similar development paths. They were proposed based on the wide observation, experience from practice, previous theoretical knowledge and on examples evident from the real-life. This article is also an attempt to go one step further and to, simultaneously with the proposal, create a theoretical financial model that will show in a logical manner the interdependences in the levels of the supplier's expenses and calculation of their contribution to profits for the retailer. Usually, just the explanation in words was given for evident facts of life, when hierarchies are proposed.

However, after being proposed, cost hierarchies were empirically tested. Also, many were further modified and improved based on this findings. The proposed hierarchy for suppliers should also be heavily empirically tested in the future.

Part of this testing will also be a situation in which expenses of some activities cannot be allocated to individual suppliers. Activities on some levels will not be possible to connect directly with individual suppliers. In a supermarket, this was not the case for presented core activities. The analysis can be further deepened in this direction with defining solutions for contribution calculation in this situation.

Conclusion

The previous theoretical example has showed how it could be possible to calculate contribution to profit from the supplier to the trading company and how it could be possible to create the cost hierarchy for suppliers in the trading company, all on the example of the retailer. The hierarchy makes it possible to find out the mannet in which the joint resources for unloading the trucks, advertising and other activities, could be used by individual suppliers. Revenues identification per supplier needs less calculation, but demands properly organized software. The calculation of the expenses per supplier by using the activity based costing is also presented in the article together with the final report based on it. All with the aim to increase the management controlling potential.

For the potential usage of the proposed method for the supplier's profitability calculation two quotations are potentially beneficial. "To discuss management and at the same time neglect accounting as a basic source of information is really not possible." (Kneževic at al., 2012, p. 68) This quotation remands about importance of accounting, more precisely of management accounting in this case, as information source for management. The proposed methodology creates a management accounting solution for profitability of suppliers as a performance indicator. This leads to the possibility for better planning, organizing, leading and controlling inside the trade businesses – all on accounting information. The second quotation is: "The relevance of information is under significant influence of materiality as an intersection point of relevance or irrelevance of information. Information is reliable when it does not contain material errors, when it is precisely shown and when users can rely on it during the process of evaluation of financial performance and making business and financial decisions." (Kneževic at al., 2012, p. 64) The proposed method is about something very material in trading – suppliers. Information based on this methodology could be considered reliable since the method has defined the way that will not have arbitrary overheads calculations with material errors. In other words, it is relatively precise. It can be claimed that managers, as users, can rely on it.

Also, it is potentially beneficial in forensic accounting. This area of accounting is mostly considered as being connected with audit. (Mitrić at al., 2012, p. 2012) By investigating the suppliers' profitability, frauds which led to unfavorable financial performance, can be potentially identified.

The future research will be related to the empirical testing of the hierarchy and creating the basis for the further improvement of the knowledge about supplier's cost hierarchy. For example, it will be possible to shape the Supplier`s Contribu-

tion to Profit Report with a situation in which all expenses cannot be allocated to a specific supplier. This type of report can also lead to further development of cost and management accounting techniques.

Having in mind that product cost hierarchy has developed into a more comprehensive direction as presented in Management accounting by Atkinson, Kaplan, Matsumura and Young, (Atkinson at al., 2007, pp. 56-62) a relevant question is also whether the presented cost hierarchy of suppliers can be further developed in the similar manner. Is it possible to include different levels of support like one connected with promotion and distribution of supplier`s goods? The level of overall support on the company level could also be included in the proposed hierarchy in the future as it was included in the product hierarchy.

However, this article is the initial and the necessary first step which leads to more demanding steps in the future. It has presented a potential method which helps to define basic steps and principles of the manner in which the calculation of the supplier`s profitability in trade business can be achieved.

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The author has written a number of articles considering the construction of management reports. He has a wide experience in business modelling, controlling, management and financial consulting, management reporting for different clients.