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ACCOUNTING AND ALLOCATION OF MANUFACTURING OVERHEAD COSTS

А Manufacturing overhead costs (hereinafter the MOH costs) are an important component of the production cost of goods (works, services). The way how their accounting is managed and the system of calculation of the production cost is built, as well as the methods used for allocation of manufacturing overhead costs to the value of finished products affect some managerial decisions: pricing of the manufactured products, modification of the manufactured products range, termination of manufacturing of non-profitable products.

The main purpose of the article was to highlight the importance of correct, economically conformed base of costs allocation in view of all factors affecting such choice. For many small industrial enterprises engaged in various sectors of the Ukrainian economy, the most common base of costs allocation is the basic salary of blue-collar workers. However, the study of calculations of a whole range of industrial enterprises, including the one the input of which was used as a basis of this article, showed that the salary represents relatively small share in the structure of production expenses, or is absent at all. As a shop foreman of small enterprises is often a blue-collar worker and a warehouseman at the same time, the salary of workers is included in manufacturing overhead costs, which are then allocated pro rata the chosen base.

Today the most common software product used by small enterprises is "1C: Accounting 8 for Ukraine". The article features the issues of MOH costs accounting management and allocation thereof to the products cost, in particular in the context of application of 1C: Accounting for Ukraine 8.3.

К Manufacturing overhead costs, allocation of overhead costs base, production cost, accounting software 1C: Accounting for Ukraine.

ОБЛІК І РОЗПОДІЛ ЗАГАЛЬНОВИРОБНИЧИХ ВИТРАТ

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А Основна мета статті — висвітлити важливість правильної, економічно вивіреної бази розподілу витрат з урахуванням усіх факторів, що впливають на такий вибір, а також розкрити практику вибору й застосування бази розподілу ЗВВ в умовах автоматизації бухгалтерського обліку із застосуванням програми 1С:Бухгалтерія для України.

К Загальновиборнічі витрати, база розподілу загальновиборнічих витрат, собівартість продукції, бухгалтерська програма 1С:Бухгалтерія для України.

УЧЕТ И РАСПРЕДЕЛЕНИЕ ОБЩЕПРОИЗВОДСТВЕННЫХ РАСХОДОВ

Пустовит А. В.,

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А Основная цель статьи — высветить важность правильной, экономически выверенной базы распределения расходов с учетом всех факторов, оказывающих влияние на такой выбор, а также раскрыть практику выбора и применения базы распределения ОПР в условиях автоматизации бухгалтерского учета с применением программы 1С:Бухгалтерия для Украины.

К Общепроизводственные расходы, база распределения общепроизводственных расходов, себестоимость продукции, бухгалтерская программа 1С:Бухгалтерия для Украины.

The tentative list of manufacturing overhead costs is provided in cl. 15 of the Accounting Regulation (Standard) 16:

- Production management costs (shops and units administrative staff wages, etc.; benefits-related deductions and health insurance of shops and units management staff wages; expenses for business trips of shops and units management staff, etc.).
- Depreciation of fixed and intangible assets of general production (shop, unit, line) purpose.
- Expenses for maintenance, operation and repair, insurance operating lease of fixed assets, other non-current assets of general production purpose.
- Expenses for improvement of technology and production engineering (wages and benefits-related deductions for employees engaged in improvement of technology and production engineering, improvement of products quality, enhancement of its reliability, durability, other performance parameters in the manufacturing process).
- Expenses for materials, purchased components and semi-finished products, payment for outsourced services, etc.
- Expenses for heating, lighting, water supply, water drain and other maintenance of manufacturing facilities.
- Expenses for maintenance of the manufacturing process (general production staff wages).
- Benefits-related deductions, health insurance of employees and production management staff.
- Expenses for in-process monitoring and monitoring of the goods, works and services quality.
- Expenses for occupational safety, health and environment.
- Other manufacturing overheads.

Usually the list of cost items, items of MOH costs is provided in the order on accounting policy or in the special internal document regulating the accounting of costs at the enterprise.

For some industries manufacturing homogenous products, such as power, coal, exploration and production sectors of industry, all costs will be direct.

In manufacturing of one type of products its production cost is easy to determine, all costs are treated as direct, and the production cost of a unit of products by calculation items are determined on the direct basis (actual costs are divided by the quantity of manufactured products).

At processing enterprises (in engineering, light, food and printing industries, etc.) the indirect costs are quite considerable. Therefore, the division of costs into direct and indirect depends on technological characteristics of the production.

For example, a shop manufactures two or more types of products. The costs of production maintenance (lease of a building or depreciation thereof, costs of the shop building repair, heating, lighting, cleaning, etc.) and costs of the production management (wages of shop foreman, his/her deputies, benefits-related deductions, depreciation of equipment, etc.).

For enterprises with a wide range of products, as the MOH costs are included in the production cost, a need arises for allocation of these costs among the types of the manufactured products. The current regulations, in particular, the Annex to Accounting Regulation (Standard) No. 16 [1] examines only the division of MOH costs into those included and not included in the production cost. If an enterprise operates smoothly, meeting the planned volume of works on monthly basis, then there is no need for division of MOH costs in those included and not included in the production cost. All MOH costs shall be deemed allocated. And the allocation of MOH costs among the objects – products, works, services pro rata the chosen base of allocation (blue-collar workers wages, financial expenses, time of the manufacturing equipment operation, etc.) will be carried out on monthly basis.

An enterprise shall by itself determine the basis of allocation of MOH costs. The MOH costs allocation base chosen will subject to the entity's peculiarities and manufacturing technology. The purpose of allocation of MOH costs is to determine, to the maximum extent possible, the production cost of goods in terms of range and to make effective managerial decisions in the field of pricing and product mix policy.

The MOH costs allocation procedure may be presented in three successive steps:

- 1) determination of value of the MOH costs;
- 2) choice of a base for allocation of MOH costs;
- 3) allocation of MOH costs pro rata the chosen base.

We shall consider the methodology of MOH costs allocation using the example of "PRINT" PE manufacturing printed products and providing related services. The enterprise uses the job method of cost calculation, where the object of calculation is an individual order, certain job performed in compliance with the customer's requirements, with the time of delivery of each order not exceeding one month. The order undergoes a range of operations as a continuously defined item.

Prior to the beginning of its operating activities the expert of "PRINT" PE calculated how will the MOH costs be allocated when various bases of allocation are used. For comparison the following bases of the MOH costs allocation were chosen: pro rata the direct costs, financial expenses, volume of manufacture, target production cost. The data of calculations are presented in Table 1.

As the materials account for lion's share of the production cost of the products manufactured by "PRINT" PE, the enterprise chosen the method of the MOH costs allocation pro rata the financial expenses. In addition the calculated cost of the products is a basis for determination of the contractual price of products or services. The price calculation using the base of the MOH costs allocation pro rata the financial expenses allows the enterprise to make the biggest profit.

"1C:Accounting 8 for Ukraine" is the most common software for automation of accounting among the small enterprises.

The application of 1C: Accounting for allocation of MOH costs requires some settings to be performed in the enterprise's accounting policy. Otherwise the software will not find the bases of allocation and will debit all MOH costs to the "Cost of goods sold" account, and the cost of products will only include direct costs for the products manufacture, that are accounted on the "Production" account. This option is possible, but the enterprise must know the actual production cost of the product, service, which also includes the MOH costs; what profit was brought by each order; whether there were situations when an order was fulfilled at prices below the expenses incurred.

1C: Accounting offers the following options of the MOH costs allocation base: production volume; target production cost; blue-collar workers' wage; financial expenses; direct costs; certain items of direct costs; not allocated.

The expert needs to set up the software in accordance with the MOH costs allocation base adopted at the enterprise.

Let's see an example of setting up the MOH costs allocation for an enterprise. The industrial enterprise manufacturing products and providing services at the Shop 1 (Table 3). Financial expenses have been chosen as a base of the MOH costs allocation (Table 2). There is no works-in-progress.

DATA OF THE MANUFACTURED PRODUCTS COST CALCULATED USING THE VARIOUS BASES OF THE MOH COSTS ALLOCATION

Table 1

DESCRIPTION OF THE PRODUCT (SERVICE, WORK)	ACCOUNT NUMBER	BASE OF THE MOH COSTS ALLOCATION			
		FINANCIAL EXPENSES	DIRECT COSTS	VOLUME OF MANUFACTURE	TARGET PRO-DUCTION COST
Order No. 4	Account 23	8,267.98	8,267.98	8,267.98	8,267.98
	Account 91	9,177.71	9,177.71	9,805.53	8,422.69
	Production cost	17,445.69	17,445.69	18,073.51	16,690.67
Order No. 18	Account 23	2,566.86	2,566.86	2,566.86	2,566.86
	Account 91	2,849.29	2,849.29	2,035.11	2,827.85
	Production cost	5,406.15	5,406.15	4,601.97	5,394.71
Certificate No. 1	Account 23	546.44	546.44	546.44	546.44
	Account 91	606.57	606.57	792.93	1,583.03
	Production cost	1,153.01	1,153.01	1,339.37	1,929.47
Total	Account 23	11,381.28	11,381.28	11,381.28	11,381.28
	Account 91	12,633.57	12,633.57	12,633.57	12,633.57

DATA OF THE MANUFACTURE OVERHEAD COSTS

Table 2

ITEM NO.	COST ITEMS	AMOUNT, UAH
1.	Wages of workers	3,910.00
2.	Social security	860.20
3.	Lease of equipment	2,010.00
4.	Depreciation of general production fixed assets	677.25
5.	Materials for maintenance of equipment	376.16
6.	Provision for routine repair of equipment	2,981.00
7.	Lease of the shop premises	425.00
8.	Shop's utility expenses	1,393.96
	Total	12,633.57

DATA OF THE MANUFACTURED PRODUCTS (SERVICES)

Table 3

ITEM NO.	DESCRIPTION OF THE PRODUCTS (SERVICES)	AREA, SQ. M	TARGET PRICE, UAH
1.	Poster 47 pcs	371	17,135.00
2.	Banner 17 pcs	77	5,067.00
3.	Lamination (service)	30	1,500.00

Setting up of production costs accounting and background information

Access: Enterprise – Accounting policy – Entity’s Accounting Policy

Tab “Production” –

Set up the allocation of costs for the main and auxiliary production:

- for services to third party customers – by the target production cost and sale results,
- for services to own units – by the target production cost;

“Account of MOH costs” – Methods of allocation of indirect costs:

- Add the record dated 01.01.20__ of the current year.
- Account of expenses – MOH costs, unit – Shop 1 (manufacture overheads),
- Base of allocation – financial expenses,
- “Processes”: Sequence of process stages – by units.

2. Establish (Enterprise - Goods (materials, products, services) – “Pricing of stock list”) for the price type “Target production cost” prices of the products (document date – 1.01.20 __):

- products – Poster 47 pcs (371 sq. m) – UAH 17,135,
- products – Banner 17 pcs (77 sq. m) – UAH 5,067.
- service – Lamination – (30 sq. m) – UAH 1,500.

Access: Enterprise – Accounting policy – Setting of the division procedure for accounts closure Date – as of 01.01.20__.

Closure procedure: 1) Shop 1. 2) Administration. 3) Sales.

During the month the enterprise carries out accounting of direct costs broken down by products or services descriptions on the Production account, MOH costs in general for the Shop 1 on the Manufacture Overhead Costs account. At the end of the month the MOH costs amount is determined and deducted pro rata the chosen base for the production cost of the manufactured products (Table 4).

Access: Transactions – By-the-book operations – Closure of the month.

If the settings are correct, the MOH costs amount will be allocated among the types of products. The entry D Production C Manufacture Overhead Costs will be formed.

The Production account (Table 5) will accumulate data of the actual cost of the manufactured

Table 4

“PRINT” PE

**Turnover Balance Sheet
For the Manufacture Overhead Costs account**

ACCOUNT	OPENING BALANCE		TURNOVER FOR THE PERIOD		CLOSING BALANCE	
TAX PURPOSE	DEBIT	CREDIT	DEBIT	CREDIT	DEBIT	CREDIT
UNITS						
COST ITEMS						
MANUFACTURE OVERHEAD COSTS			12,633.57	12,633.57		
VAT taxable			12,633.57	12,633.57		
SHOP 1			12,633.57	12,633.57		
Wage and social security			4,770.20	4,770.20		
Depreciation of fixed assets			677.25	677.25		
Shop’s utility expenses			1,393.96	1,393.96		
Production support			376.16	376.16		
Lease of manufacturing equipment			2,010.00	2,010.00		
Lease of the shop’s premises			425.00	425.00		
Routine repair of equipment			2,981.00	2,981.00		
TOTAL			12,633.57	12,633.57		

Table 5

“PRINT” PE

Turnover Balance Sheet for the Production account

ACCOUNT	OPENING BALANCE		TURNOVER FOR THE PERIOD		CLOSING BALANCE	
TAX ASSESSMENT	DEBIT	CREDIT	DEBIT	CREDIT	DEBIT	CREDIT
STOCK ITEM GROUPS						
COST ITEMS						
PRODUCTION			24,014.85	24,014.85		
Main production			24,014.85	24,014.85		
VAT taxable			24,014.85	24,014.85		
Order No. 4 dated 02.06.2016 Poster 47 pcs (371 sq. m) TEA COMPANY LLC			17,445.69	17,445.69		
Wage and social security			3,465.33	17,445.69		
Depreciation of fixed assets			491.99			
Shop’s utility expenses			1,012.65			
Production support			273.26			
Lease of manufacturing equipment			1,460.18			
Lease of the shop’s premises			308.74			
Routine repair of equipment			2,165.56			
Direct financial expenses			8,267.98			
Order No. 18 dated 17.06.2016 Banner 17 pcs (77 sq. m) Fifth Element LLC			5,416.15	5,416.15		
Wage and social security			1,075.84	5,416.15		
Depreciation of fixed assets			152.74			
Shop’s utility expenses			314.38			
Production support			84.84			
Lease of manufacturing equipment			453.32			
Lease of the shop’s premises			95.85			
Routine repair of equipment			672.32			
Direct financial expenses			2,566.86			
Lamination Disies LLC Certificate dated 19.06.2016			1,153.01	1,153.01		
Wage and social security			229.03	1,153.01		
Depreciation of fixed assets			32.52			
Shop’s utility expenses			66.93			
Production support			18.06			
Lease of manufacturing equipment			96.50			
Lease of the shop’s premises			20.41			
Routine repair of equipment			143.12			
Direct financial expenses			546.44			
TOTAL			24,014.85	24,014.85		

The choice of financial expenses as a basis of the MOH costs allocation may be reviewed with time, which will be driven by such factors as the enterprise’s operations expansion, number of employees, competitiveness of the products manufactured.

References:

- 1. Accounting Regulations (Standard) 16 “Costs”, approved by the Order of the Ministry of Finance of Ukraine No. 318 dated 31.12.1999, as amended.
- 2. Instruction on the application of the Chart of Accounts for assets, capital, liabilities and business transactions of enterprises and organizations. Order of the Ministry of Finance of Ukraine No. 291 dated 30.11.1999, as amended.

products (services rendered). The same processing will show the transfer of finished products to the warehouse in the entry D Finished Products and C Production. As all orders are fulfilled by the end of the month and delivered to the customer, there is no balances of work-in-progress, and the entries reflecting the deduction of finished products sold to buyers will be made in the same processing C Finished products, as well as the cost of services provided will be recorded D Cost of works and services sold C Production.

Data of the production cost broken down by the items of accounting – product, service by calculation items may be seen in the Certificate of Calculation – Calculation (Accounting) (Annex 1). (*Access*: Transactions – By-the-book operations – Certificates of Calculation – Calculation (Accounting)). Provided that the opportunities of the automation not only allow to see the structure of direct costs (in our example – description of materials, their quantity and cost of an item of accounting), but also the MOH costs broken down by the expenses incurred per item of accounting for both direct and MOH costs.

Information about the output for the month by types of activity, product and service description, deviation of the actual cost from the estimated one may be seen

in the Certificate of Calculation of the Products Cost. Access: Transactions – By-the-book operations – Certificates of Calculation – Products Cost) (Annex 2).

The choice of financial expenses as a basis of the MOH costs allocation may be reviewed with time, which will be driven by such factors as the enterprise’s operations expansion, number of employees, competitiveness of the products manufactured.

Conclusions and prospects for further studies

To sum up it can be stated that accounting and allocation of MOH costs among objects – products, works and services in proportion to the selected base of allocation is an important area of accounting. Determination accuracy of actual production cost depends on its organization and chosen methods of allocation of MOH costs. Small enterprises can use application 1C: Accounting for Ukraine in order to register transactions on production of goods, works, and services. Its price is moderate and this application allows to make customization which is required for accounting and allocation of MOH costs.

The software, which is used for the automation of accounting, will be improved every year. At the same time, the need for professionals, who can help the enterprise to select an accurate, economic verified allocation of MOH costs base, will be unchangeable.

CALCULATION OF THE PRODUCTS COST (ACCOUNTING)

Annex 1

		ACCOUNTING		TAX ACCOUNTING	
ORDER NO. 4 DATED 02.06.2016 TEA COMPANY LLC (PCS)		COST PER UNIT		17,445.68	
		QUANTITY MANUFACTURED:		1,000	
SHOP NO. 1 / ORDER NO. 4 DATED 02.06.2016 POSTER 47 PCS (371 SQ. M)		ACTUAL VALUE OF THE OUTPUT:		17,445.68	
COSTS OF THE MAIN (AUXILIARY) PRODUCTION:	QUANTITY OF DEDUCTED RAW MATERIALS	AVERAGE PRICE OF THE DEDUCTED RAW MATERIALS		AMOUNT OF COSTS	
		ACCOUNTING	TAX ACCOUNTING	ACCOUNTING	TAX ACCOUNTING
Direct financial costs				8,267.98	
Raw materials (acc. 201)				8,267.98	
Glue cosmofen (pcs)	3.000	42.35		127.04	
Banner laminated dull (m²)	371.000	18.47		6,853.62	
Ink 2 (m²)	371.000	1.80		667.56	
Grommet (pcs)	1,890.000	0.33		619.76	
Total:				8,267.98	

Manufacture overhead costs (acc. 91):					
Manufacturing equipment lease				1,460.18	
Routine repair of equipment				2,165.56	
Wage and UST				3,465.33	
Property lease				308.74	
Utility expenses compensation				1,012.65	
Production support				273.26	
Depreciation of PPE (Shop)				491.99	
Total:				9,177.71	

				ACCOUNTING	TAX ACCOUNTING
ORDER NO. 18 DATED 17.06.2016 FIFTH ELEMENT LLC (PCS)		COST PER UNIT		5,416.17	
		QUANTITY MANUFACTURED:		1,000	
SHOP NO. 1 / ORDER NO. 18 DATED 17.06.2016 BANNER 17 PCS (77 SQ. M) FIFTH ELEMENT		ACTUAL VALUE OF THE OUTPUT:		5,416.17	
COSTS OF THE MAIN (AUXILIARY) PRODUCTION:	QUANTITY OF DEDUCTED RAW MATERIALS	AVERAGE PRICE OF THE DEDUCTED RAW MATERIALS		AMOUNT OF COSTS	
		ACCOUNTING	TAX ACCOUNTING	ACCOUNTING	TAX ACCOUNTING
Direct financial costs				2,566.86	
Raw materials (acc. 201)				2,566.86	
Ink 2 (m²)	77.000	1.78		137.29	
Grommet (pcs)	425.000	0.33		139.36	
Banner molten dull (m²)	77.000	29.74		2,290.21	
Total:				2,566.86	
Manufacture overhead costs (acc. 91):					
Manufacturing equipment lease				453.32	
Routine repair of equipment				672.32	
Wage and UST				1,075.84	
Property lease				95.85	
utility expenses compensation				314.38	
Production support				84.84	
Depreciation of PPE (Shop)				152.74	
Total:				2,849.29	

				ACCOUNTING	TAX ACCOUNTING
PRODUCTION-RELATED SERVICES DISIES UKRAINE LLC		COST PER UNIT		1,153.01	
SHOP NO. 1 / BOX LAMINATION DISIES UKRAINE LLC DATED 19.06.2016					
COSTS OF THE MAIN (AUXILIARY) PRODUCTION:	QUANTITY OF DEDUCTED RAW MATERIALS	AVERAGE PRICE OF THE DEDUCTED RAW MATERIALS		AMOUNT OF COSTS	
		ACCOUNTING	TAX ACCOUNTING	ACCOUNTING	TAX ACCOUNTING
Direct financial costs				546.44	
Raw materials (acc. 201)				546.44	
Lamination flm (m²)	30.000	18.21		546.44	
Total:				546.44	
Manufacture overhead costs (acc. 91):					
Manufacturing equipment lease				96.50	
Routine repair of equipment				143.12	
Wage and UST				229.03	
Property lease				20.41	
Utility expenses compensation				66.93	
Production support				18.06	
Depreciation of PPE (Shop)				32.52	
Total:				606.57	

CALCULATION OF THE PRODUCTS COST (ACCOUNTING)

Annex 2

Entity: «PRINT» PE

Certificate of
Calculation

Number	Date	Period
	30.06.2016	June 2016

Production cost of the manufactured products and performed services in respect of which the planned prices are provided (accounting)

DIRECT COSTS									MANUFACTURED PRODUCTS AND PERFORMED SERVICES					DEVIATION OF THE ACTUAL PRODUCTION COST FROM THE TARGET ONE (COL.14, 15 - COL.11)	
ACCOUNT	UNIT	STOCK ITEM GROUP	EXPENSES BEFORE ALLOCATION, INCLUDING OPENING BALANCES OF WORKS-IN-PROGRESS		CLOSING BALANCE OF WORKS-IN-PROGRESS		COSTS INCLUDED IN THE PRICE OF MANUFACTURED PRODUCTS AND PERFORMED SERVICES (COL.4,5 –COL.6,7)		NAME	PLANNED PRODUCTION COST	RATIO (COL. 11 / TOTAL COL.11)	AMOUNT OF DIRECT COSTS ATTRIBUTED TO MANUFACTURE			
			ACCOUNTING	TAX ACCOUNTING	ACCOUNTING	TAX ACCOUNTING	ACCOUNTING	TAX ACCOUNTING				ACCOUNTING	TAX ACCOUNTING		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
231	SHOP NO.1	Order No. 4 dated 02.06.2016 Poster 47 pcs (371 sq. m) TEA COMPANY	17,445.68	17,135.00			17 445.68	17 135.00	Order No. 4 dated 02.06.2016	17,135.00	1.0	17,445.68	17,135.00	310.68	
231	SHOP NO.1	Order No. 18 dated 17.06.2016 banner 17 pcs (77 sq. m) Fifth Element	5,416.17	5,067.00			5 416.17	5 067.00	Order No. 18 dated 17.06.2016 Fifth Element	5,067.00	1.0	5,416.17	5,067.00	349.17	

1. Accounting Regulation (Standard) 16 "Costs", approved by the Order of the Ministry of Finance of Ukraine № 318 of December 31, 1999, as amended.
2. Instruction on the application of the Chart of Accounts for assets, capital, liabilities and business transactions of enterprises and organizations. The Order of the Ministry of Finance of Ukraine № 291 of November 30, 1999, as amended.

1. Положение (стандарт) бухгалтерского учета 16 «Расходы», утвержденный приказом МФУ от 31.12.1999р. № 318,с изменениями.
2. Инструкция о применении Плана счетов бухгалтерского учета активов, капитала, обязательств и хозяйственных операций предприятий и организаций. Приказ МФУ от 30.11.1999 р.№ 291, с изменениями.

Submitted: 13.05.2016