

## Methods of Internal Clearing of Services

Internal clearing of services means transferring overheads from indirect cost centres to direct cost centres. This transfer is based on the services rendered by indirect cost centres to direct cost centres, and so those have to pay for these services. Paying means increasing the consignee's cost and decreasing the supplier's cost by the same amount. Finally all overheads have been transferred from the indirect cost centres to the direct cost centres, thus leaving the indirect cost centres without any remaining costs.

Since the overheads of the direct cost centres show up twice in the system, before and after internal clearing of services, different terms for both types of cost must be used: A cost centre's costs before internal clearing of services took place are named primary overheads, the costs added by internal clearing of services are named secondary overheads. When internal clearing of services is finished, the primary overheads of indirect cost centres have turned to be secondary overheads of the direct cost centres.

This result is yielded by all methods of internal clearing of services. The methods differ however in the internal clearing of services *between* indirect cost centres. Indirect cost centres as any other may make use of other cost centres' output, even of their own. Thus the primary overheads of indirect cost centres may be increased by secondary overheads before both are transferred. If the term "invoiced costs" is used for these costs transferred, the invoiced costs of an indirect cost centre are:

$$(1) \quad \textit{Invoiced costs} = \textit{Primary overheads} + \textit{Secondary overheads}$$

The amount of the invoices is given by the number of services multiplied by the cost per unit. Using the symbol  $c$  for the cost per unit and the term "invoiced quantity" for the number of services rendered gives

$$(2) \quad \textit{Invoiced costs} = c \cdot \textit{Invoiced quantity}$$

or

$$(3) \quad c = \frac{\textit{Invoiced costs}}{\textit{Invoiced quantity}}$$

Substituting (1) into (3):

$$(4) \quad c = \frac{\textit{Primary overheads} + \textit{Secondary overheads}}{\textit{Invoiced quantity}}$$

This equation is independent of the method used for internal clearing of services. The methods differ in the secondary overheads and in the invoiced quantity for each indirect cost centre. According to the specific method the indirect cost centres are charged for their use of services or they are not charged for it. So it may happen that a part of the deliveries remains without any invoice, splitting the total quantity of services produced into two parts, the invoiced quantity and the quantity not invoiced:

$$(5) \quad \textit{Quantity produced} = \textit{Invoiced quantity} + \textit{Quantity not invoiced}$$

From this follows:

$$(6) \quad \textit{Invoiced quantity} = \textit{Quantity produced} - \textit{Quantity not invoiced}$$

Substituting this into (4):

$$(7) \quad c = \frac{\textit{Primary overheads} + \textit{Secondary overheads}}{\textit{Quantity produced} - \textit{Quantity not invoiced}}$$

This equation can be used in order to characterise the different methods of internal clearing of services:

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If **No internal clearing of service between indirect cost centres** takes place, there are no secondary overheads of the indirect cost centres at all, and all deliveries to indirect cost centres remain without an invoice. So we have

$$(8) \quad k = \frac{\text{Primary overheads}}{\text{Quantity produced} - \text{All deliveries to indirect cost centres}}$$

According to **Unidirectional internal clearing of services** there is a ranking of indirect cost centres, shown by their current number. Each indirect cost centre charges only and exclusively subsequent cost centres. Thus its secondary overheads are determined only by previous cost centres. The quantities delivered to previous cost centres and to itself are not invoiced to the consignees. Thus the cost per unit of a specific indirect cost centre is

$$(9) \quad c = \frac{\text{Primary overheads} + \text{Secondary overheads, charged by previous cost centres}}{\text{Quantity produced} - \text{Deliveries to previous cost centres and to itself}}$$

Contrary to that, in **Mutual internal clearing of services** all deliveries are invoiced, thus there are no deliveries remaining not invoiced. Each cost centre is charged for its total use of services, whosoever supplied them. Accordingly the cost per unit is

$$(10) \quad c = \frac{\text{Primary overheads} + \text{Secondary overheads, charged by all indirect cost centres}}{\text{Quantity produced}}$$