

# Unit Costing

## BACKGROUND

In order to be able to make sensible decisions about the efficiency and effectiveness of processes and organisations, a simple, but robust method of carrying out Unit Costing is required. The aim is to be able to compare “apples with apples”.

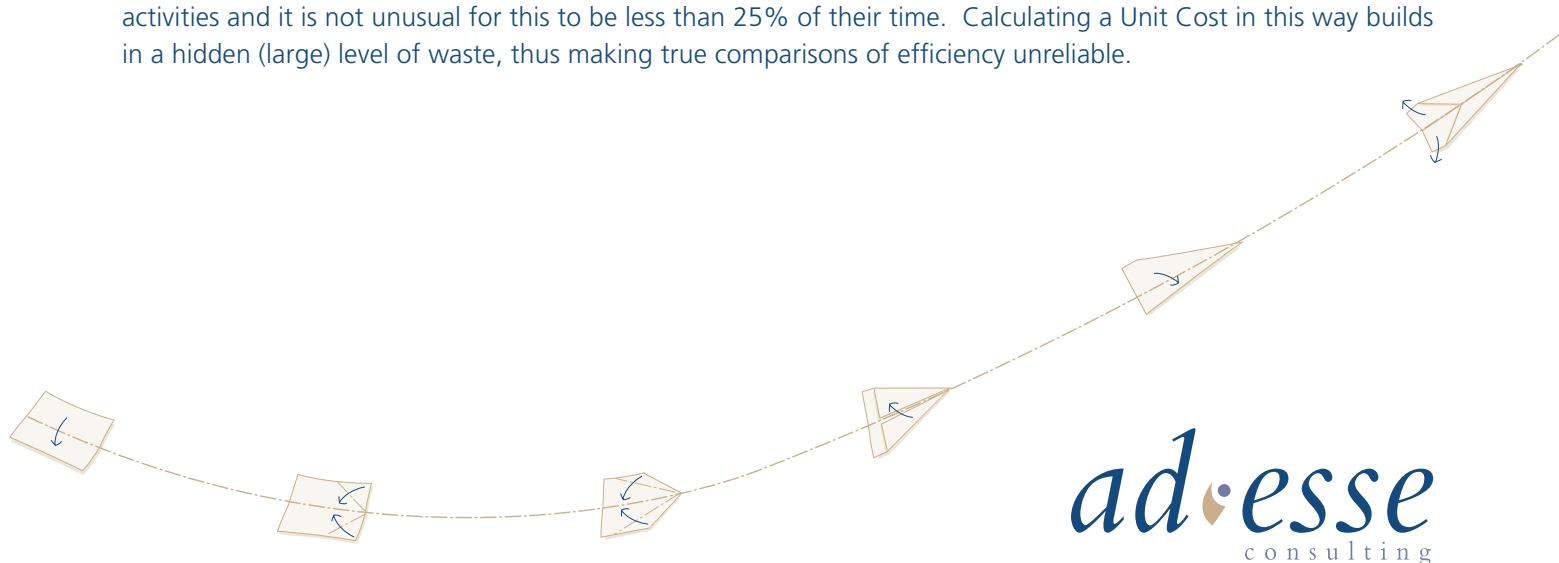
Our clients typically want to be able to answer questions such as:

- What is the cost of processing one transaction? (e.g. cost per purchase order, cost per treatment, cost per case)
- How much resource do we need available, in order to be able to process this amount of work? (e.g. Full Time Equivalents required to deal with 10 cases per day)
- How do our processing costs compare with those of other organisations? (e.g. against benchmark organisations or for market testing)

## WHAT UNIT COSTING IS NOT

You cannot arrive at a reliable Unit Cost figure simply by dividing the cost of running a Department (say), by the number of transactions processed by that department.

Why not? Because the answer takes no account of the fact that the resources are not fully occupied in processing those transactions. The resources (people or machines) only spend a proportion of their time on the value adding activities and it is not unusual for this to be less than 25% of their time. Calculating a Unit Cost in this way builds in a hidden (large) level of waste, thus making true comparisons of efficiency unreliable.

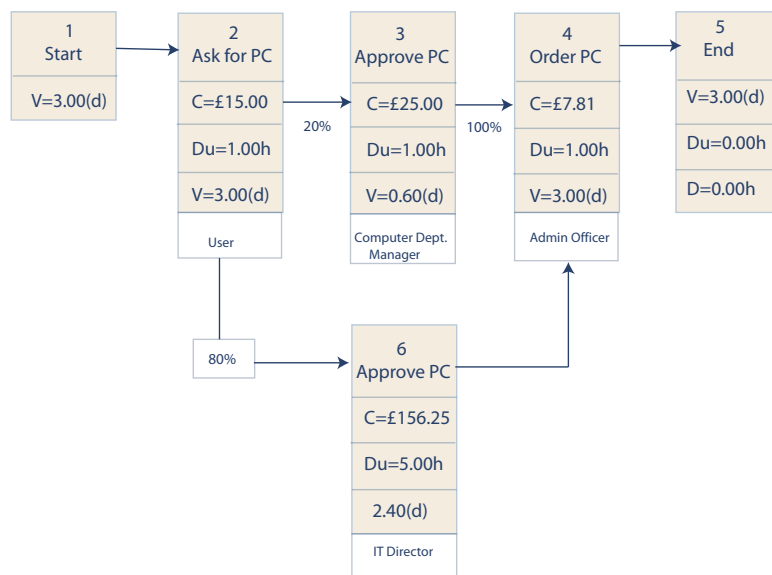


## UNIT COSTING PRINCIPLES

For Unit Costing to be meaningful you need to know the following:

- The scope of the activities carried out
- The resources employed in carrying out those activities
- The amount of those resources consumed per transaction

For example, in a Procurement process that we worked on, we defined the scope as all the tasks from identification of the need, through to delivery to the user. But, it excluded the activities carried out by external suppliers.



The resources required to carry out the activities may be people, materials, facilities or equipment. For each activity within the scope of the exercise, each needs to be associated with a resource (or resources).

These should be costed on an agreed basis; for example many public sector organisations use a “Ready Reckoner” approach to define hourly rates for each grade, with or without overheads such as NI, pension contributions, accommodation etc.. In the above Procurement example, each person involved in the process was costed on an hourly basis excluding overheads (1 hour of the Computer Dept. Manager’s time = £25).

Finally, the amount of each resource consumed per transaction is required; in the example above, ordering a PC takes 1 hour. This information can either be measured by observation, or estimated, depending on the degree of accuracy required. It may also be possible to calculate an average figure using a known processing rate of say 10 transactions per hour. But, care must be taken if it is known that there are wide variations in processing rates, otherwise the average figure may be misleading. In such cases, it is important to understand the variation in times and calculate Unit Costs for a typical profile of, for example, simple, typical and complex transactions.

The required degree of accuracy should also be considered when deciding how to gather the data; whether or not a ball-park estimate is acceptable will depend on how the data will be used. Planning future resource requirements is likely to require a more robust approach than when simply seeking to demonstrate broad cost savings. The impact of rounding errors can also be significant. One organisation rounded up a 20 second transaction to 1 minute, for ease of calculation. Then, after multiplying by the volume of transactions, they miraculously discovered that they had exactly the right number of people staffing the process – WRONG!

Another factor to consider, which is illustrated in the example, is the case where several routes exist through a process (e.g. 80% of cases are approved by the IT Director). The Unit Costing should take this into account as well.

Working through for the above Procurement example, the cost per transaction is £152.81. Assuming 3 transactions per day, over a 12 month period this amounts to £119,192 (5 day week and 52 week year).

## APPLYING UNIT COSTING TO A SERVICE OR ORGANISATION

Calculating the unit costs at a single process level is easy enough, but in many cases, there is a need to look at a whole service delivery unit or organisation. Here, there will be multiple processes, often carried out by a wide range of staff, some of whom will be involved in several processes.

The key stages for an analysis at service or organisation level are:

- Understand the organisation structure for the scope of the service or organisation (this will help identify who to speak with for data gathering)
- Identify the core processes involved and any additional activities that people are involved in (such as general administration and support activities like training, or “housekeeping”)
- Capture and map the core processes, by structured interview, live mapping workshops or process walk-through
- Identify the durations of the processes and volumes of transactions (using the same approaches as described above)
- Calculate Unit Costs and/or FTE requirements (and make allowances/assumptions for staff “downtime” – typically 10-15%)

Normally, this approach will highlight a number of non-value adding activities and these will need to be challenged in order to reach agreement on a realistic level of resource required to deliver the service(s).

## ANALYSIS AND SCENARIO PLANNING

The software we use to help us carry out this process analysis enables us to export the basic data into a spreadsheet to carry out more detailed analysis. It can also aggregate data for each role/resource in order to examine the numbers of staff required at particular grades.

A typical analysis might be presented as follows:

| Service Activity              | Resource      | FTE         | Down-time (10%) | FTE & Down-time | Duration (Mins) | Volume (Per Year) |
|-------------------------------|---------------|-------------|-----------------|-----------------|-----------------|-------------------|
| <b>Process Client Claims</b>  |               |             |                 |                 |                 |                   |
| Enter onto system             | Admin Officer | 0.30        | 0.03            | 0.330           | 17              | 2000              |
| Deal with Queries             | Supervisor    | 0.27        | 0.027           | 0.297           | 60              | 500               |
| Prepare client correspondance | Admin Officer | 0.10        | 0.01            | 0.110           | 6               | 2000              |
| Review client correspondance  | Supervisor    | 0.05        | 0.005           | 0.055           | 28              | 200               |
| <b>Total FTE</b>              |               | <b>0.72</b> | <b>0.072</b>    | <b>0.792</b>    |                 |                   |

We can also create a range of scenarios with the software so that improvement options can be assessed rapidly. Changing process flows, or resources, or activity durations can be done in a matter of minutes and the updated costing analysis reports generated in a live workshop situation, if necessary.

## OUR PROJECT APPROACH

Any analysis of current working practices has the potential to cause concern among a range of stakeholders. Therefore our approach to such a project emphasises the importance of identifying and agreeing key stakeholders and their requirements early on.

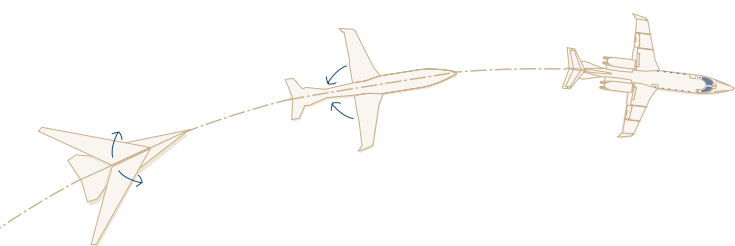
We usually work with a senior manager, who would act as sponsor for the project, to agree specific objectives and what approach will be required to achieve the level of understanding and analysis required. In many projects it is appropriate to have a high degree of involvement of the staff operating the processes, since they understand what actually happens and usually have good ideas on how things can be improved.

Two of the techniques we use regularly are live mapping workshops and process walk-throughs. In the former, we facilitate the development of the process maps using control-ES software. Maps are captured on-screen and agreed by all those present, before moving on to consider data collection. In a process walk-through we, or the organisation's staff we have trained, trace the actual process flow by interviewing the people in the workplace. The maps still need to be captured using the software, but it's a great way of engaging with people on their territory.

We would also usually want to have the involvement of a senior Finance person, to help validate the numbers and financial assumptions. This is important to ensure a degree of credibility with senior managers when recommendations are eventually presented.

## MORE INFORMATION

To find out more about how Ad Esse can help with Unit Costing and Activity Based Costing, contact us at [seriousfun@ad-esse.com](mailto:seriousfun@ad-esse.com) or call us at 0870 458 6162.



## FURTHER INFORMATION

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