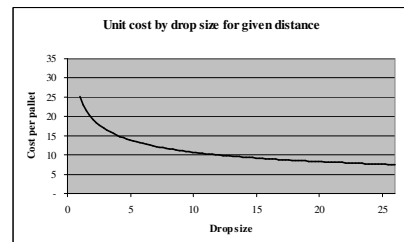


Deriving delivery costs

Do you need to establish the cost of deliveries? You may be a:

- manufacturer wishing to establish the cost of serving particular customers or sectors to identify whether they are profitable or not
- retailer wanting to quantify inbound or outbound delivery costs according to drop size and location
- shared user transport company wanting to establish contract profitability
- haulier that wants to build a rates matrix to ensure pricing disciplines
- consultant wanting to derive cost tables to drive a supply chain planning tool

While it is easy to establish the cost of operating an entire vehicle fleet or a particular route, the cost of serving a particular delivery will depend on the size of the delivery and the distance and time the delivery is from its depot and from other deliveries



Cost apportionment can be used to determine the cost of serving each delivery, but must be used with caution, as it will only be accurate for the set of deliveries you are costing. For example, removing some deliveries will affect the cost of those that remain.

The process that we follow to derive costs is to use a routing and scheduling package to produce a base case of the current operation, extract the key operating statistics, then apportion the costs to individual deliveries in a spreadsheet model. Finally, the costs are calibrated back to the current operation and the analysis carried out.

Routing and scheduling

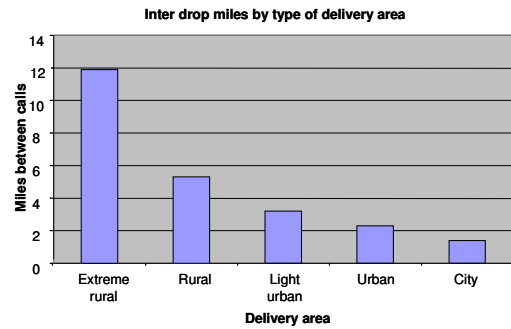


We use the Paragon routing and scheduling system for this stage of the work. When we build a base case, we take a sample week and use settings such as unloading rates, vehicle capacities and running speeds that are a reflection of the current operation. The base case will produce a fleet size, operating statistics and overall cost that can be validated against the existing operation and management accounts. A number of runs may have to be undertaken, with discrepancies investigated, to produce a reasonable match. We will then generate spreadsheet reports on customer locations, drop sizes, stem and inter-drop speeds and distances. These statistics may be summarised by postal area or geographic characteristics, depending on the project.

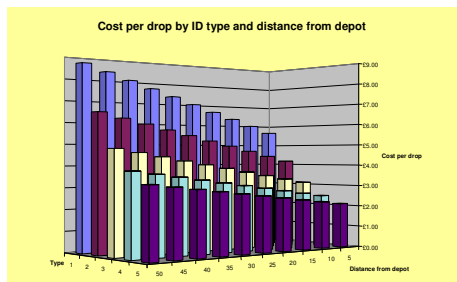
Cost apportionment model

The model uses macros to cost a delivery at time assuming that a vehicle carries deliveries that all have the same characteristics as the one being costed. General inputs include the vehicle cost per day and mile and the vehicle capacity and unloading rate. As each delivery is costed the model considers the drop size, stem and inter-drop speed and distance that apply to that particular delivery. It tests

whether the vehicle will run out of driving time, shift time or capacity, then calculates the cost per drop for the most constrained. An additional test is carried out to evaluate whether the cost would be lower if the vehicle did two trips per day. With mixed fleets, multi day runs and double manned vehicles, a delivery can be costed several times and the lowest cost selected.



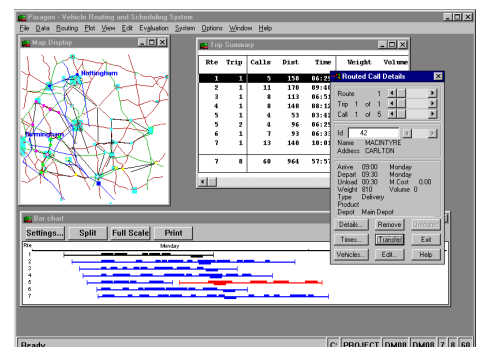
Calibration and analysis



When all deliveries have been individually costed, the total cost can be calculated and compared back to the cost of the fleet identified in the base case. We can then tabulate and analyse the delivery costs in any way we desire: by combinations of trade sector, customer, drop size band, postcode area, country and so on.

Profitability studies

One of the uses of this technique is in customer account profitability studies. Care should be taken if the analysis points towards withdrawing from an unprofitable sector, as not all the apportioned costs will be saved. Removing the unprofitable deliveries will affect the costs of the remaining ones, possibly making them unprofitable. Decisions should be tested with a routing and scheduling package, which will establish the new fleet requirement, before they are finalised.



For further details contact Phil Gibbs of Logistech on 01327 811641 or at phil.gibbs@logistech.co.uk