Establishing the optimum mix between own fleet and subcontracted loads.

A common approach to dividing workload between the in-house fleet and subcontractors is by drawing a line based on certain criteria such as:

- No nights out
- An arbitrary boundary
- Historical practice

However, depending on the costs of the fleet and contractors' rates tables the above approaches will rarely be the most cost effective option, and in many cases the fleet will be optimised for the workload or area that has been assigned to it but not for the company's bottom line because:

- Some multi day routes may be cheaper on the fleet than subcontracted
- Some routes within the arbitrary boundary may be cheaper on the fleet than subcontracted
- The historical practice may no longer be relevant to the current business

The object of this proposed approach is two fold:

1. To outline the strategic study necessary to determine the optimum fleet and contractor balance that allows the lowest overall cost to serve.
2. To impart a daily methodology that determines the most cost effective work allocation between fleet and subcontractors.

Strategic Study to Determine the Optimum Fleet and Contractor Balance

The approach is as follows:

1. The modelling must be based on at least four weeks of historical representative delivery data.
2. A detailed routing and scheduling exercise must be performed on the data for all customers except islands unless there is a known benefit to serving islands on the in-house fleet.
3. Every route is then costed with own costs and subcontractors' costs (See table starting in cell L66 in sample spreadsheet).
4. For each route, the subcontractors' costs are subtracted from the in-house costs (See cell AE67 in sample spreadsheet).
5. For each week, by day and by vehicle type, arrange all routes in descending order of savings made by keeping route in-house as opposed to subcontracting the load. (See column AE row 68 onwards in sample spreadsheet.
6. Create a summary table where, for each day and vehicle type and row, the sum of the four weeks' calculated savings are summed. This table will reveal the most economic fleet size and profile (Summary table starting in cell B8).

This exercise can be done for a multiple depot network. However, trunking costs may need to be taken into account.

Daily Methodology to Determine the Most Cost Effective Work Allocation Between Fleet and Subcontractors

Once the fleet profile is determined using the process detailed above, a similar exercise must be carried out daily to ensure that the most cost effective loads are kept on the in-house fleet. The steps are as follows:

1. The whole workload for the day in question must be routed.
2. Each route must be costed using in-house fleet costs and subcontractors' costs.
3. For each route, the contractors' costs must be subtracted from the in-house costs to determine the degree of saving or cost each route kept in-house will generate. The list must be sorted by vehicle type in descending order of saving.
4. The top saving (and occasionally least cost)routes for each vehicle type will be chosen.

There will be occasions when there are more routes that are cheaper to keep in house than there are vehicles in the fleet, and there will be occasions when a number of vehicles will end up going on routes which would have been cheaper to subcontract. This is why, by using at least four weeks' worth of data in the strategic study, the likely optimum fleet profile for the long run is determined.

You may wish to consider me for assistance with your strategic study and adoption of the daily methodology.

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Do you have an opinion or any suggestions? I would like to hear from you.