

Mapping and Modelling with mystrategy®

mystrategy® can be used in two distinct ways

- To 'map' actual or estimated information about an issue **OR**
- To 'model' [i.e. simulate] how a situation is changing

Mapping with mystrategy® - Overview

In this mode, data is entered numerically or as a graphical estimate in the variables. This is the same as entering data into a spreadsheet, rather than calculating values from other elements or cells.

You may find this useful for several purposes. It can bring to life real data from other sources, such as management reports or business plans. You can show real historic data, alongside 'sketch' estimates for the future in the same diagram. In other situations, you may want to display rough estimates of factors that are unknown, but thought to be important, as the basis for team discussions, e.g. how you think your company's reputation might be improved and its possible impact on growth.

Modelling with mystrategy® - Overview

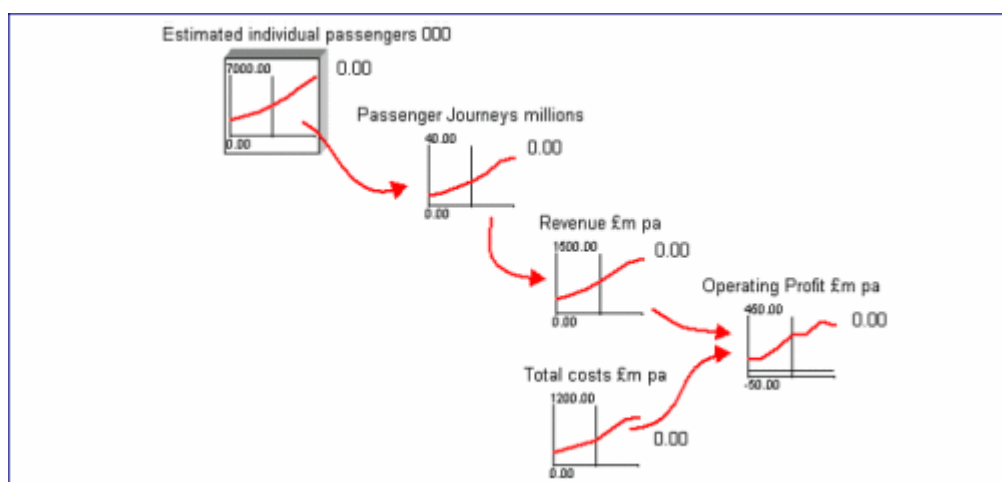
In this mode, the model uses equations to calculate information, not only for each period, but also from each period to the next.

Structural clarity is assisted by ensuring that all elements with a direct link to the item being calculated must be used so you cannot accidentally omit to use an item that you have decided to link in.

The resulting simulated data can be displayed alongside your inputs or estimates from the mapping mode to compare your expectation with the assumptions and relationships built into the model.

Example - Part 1: Mapping an airline's profits.

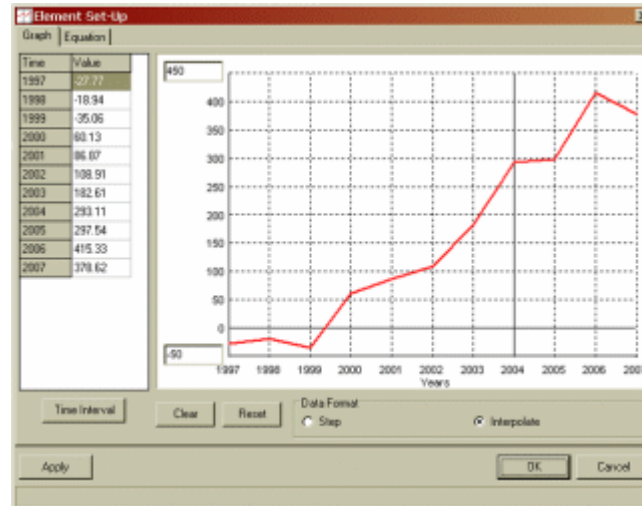
The following diagram is a map of some top-level data for an airline, showing information from 2001 to 2007 - the vertical line shows 'today', i.e. end of 2004. The small time-charts display the time-path of each variable over this period, with actual data for the past, and estimated values for the future. The numbers alongside each variable, currently showing zero, would display values if the model were simulating. The actual data for each item is shown in detail by 'opening' the variable.



In mapping mode, the connecting arrows are red to warn you that the values are not calculated from each other. This is the same as cells in a spreadsheet containing values, rather than formulae - although a spreadsheet will not display a warning. In the same way as in a spreadsheet, if you make a change in one

element it will not cause anything else to update.

The chart below shows how the Operating Profit data is entered once the variable is opened [note the 'Equation' tab where you enter a formula if you want to simulate]. The actual results from 1997 to 2004 have been copied from a spreadsheet into the column of cells on the left [or else typed in]. Although we have data for 1997-2004, we want to focus on recent history and the next 3 years, so in the map above, we have set MyStrategy time-display to show only 2001-2007, with 'today' at 2004.

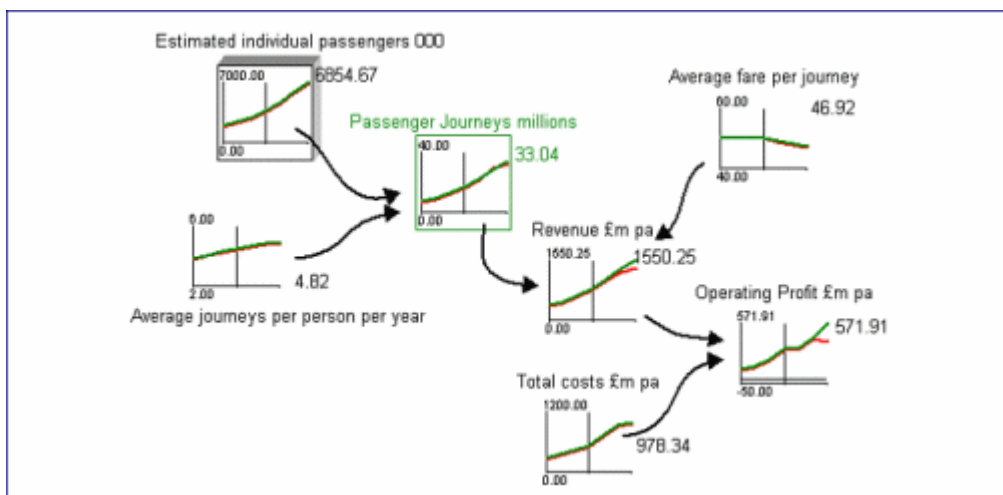


The 'future' values can be typed into the last few data cells, or else 'sketched' by dragging the mouse pointer across the right-hand portion of the chart. [You could sketch in the historic values too, if you wish, but we assume you have real data to copy in]. If your challenge is purely about the future, you will set 'today' to be the first time-point, and you can drag the mouse pointer over the whole chart to create a view of the future time-horizon you are considering.

Example - Part 2: Modelling the airline's profits.

In practice, you might want to check that the numbers make sense, and at the same time check your arithmetic for the future values, so you can start adding other variables and equations to model the airline's progress. The equations you use are exactly equivalent to the calculations you put into spreadsheet cells. In mystrategy®, however, you always refer to variables by name [rather than cell-reference], and you can only use variables that are linked by the causal arrows - a useful protection against common spreadsheet errors!

1. You open the operating profit variable and add an equation .. $\text{profit} = \text{revenue} - \text{costs}$
2. Revenues depend on fares as well as journey numbers, so you add a variable for average fare, and an equation for revenue .. $\text{revenue} = \text{journeys} * \text{average fare}$
3. Total journeys reflect not only the number of passengers [i.e. people], but also how often they fly with you, so you add a variable for journey frequency, and an equation for total journeys .. $\text{journeys per year} = \text{passengers} * \text{average journey frequency}$

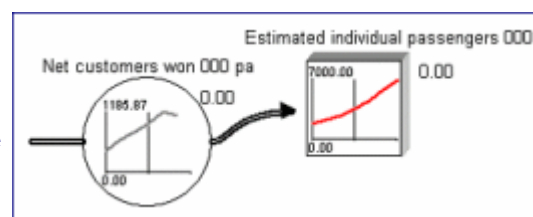


Now you have told **mystrategy®** how to calculate everything in your map, you can hit the Run button and it will simulate both the history and the future. [Note: for this example, we have put historic data into the variables for average journeys and average fare that match the other reported values].

It looks like your estimates for the future could be exceeded if this scenario for passengers, journey frequency and fares occurs. Note the values shown alongside each variable in this diagram are displaying data for the end of the simulation, i.e. end-2007. You can, though, 'step' the model through year by year to display values at each year-end, and also create graphs or tables of any variable for all points in time.

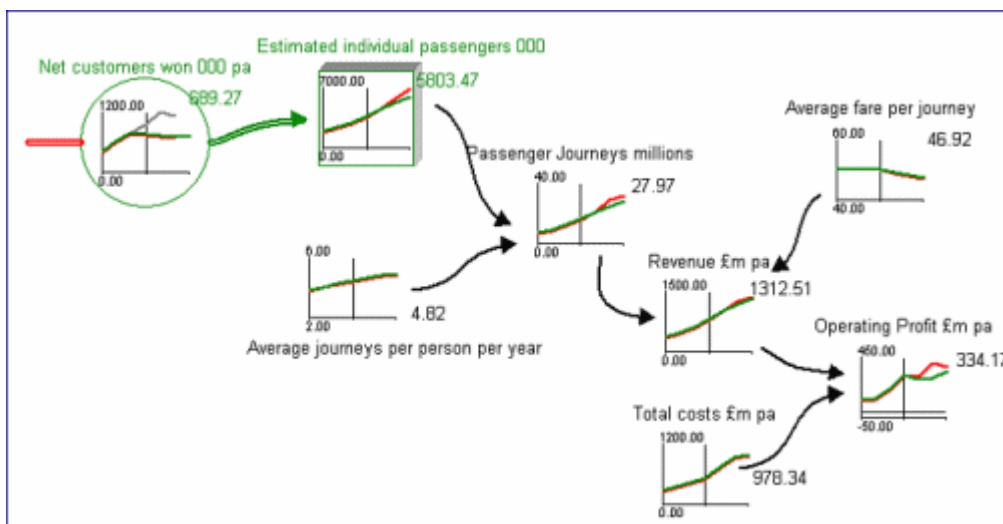
Using simulation to compare the result of alternatives.

To check the realism of your projections, you may also want to see what this future requires in terms of winning new passengers, so you add an in-flow to the passenger resource, called 'net passengers won per year'. **mystrategy®** offers the facility to work out what this flow must be in order to explain the time-path for the passengers [right-click the net passengers flow and select 'derive']. A grey time-line appears in the net passenger flow chart - it seems your projection implies a further acceleration in passenger win-rates both this year and next, with a slight slow down in the final year.



[Note: **mystrategy®** reports period-end values, so the passenger win rate 'today' - i.e. the last moment of 2004 - is what we estimate will apply throughout 2005. Consequently, the final value for 'net passengers won' is the win-rate from the last moment in 2006 that will apply throughout 2007, and no value is shown for the end of 2007].

To see how sensitive your projections are to this demanding win-rate target, you first make the 'sketched' values for net passengers won match this derived time-path - right-click the flow once more and select 'set sketch to derived', and a red time-line appears behind the grey. You can now try out an alternative projection, e.g. what happens if the win-rate falls immediately? In the diagram below, you have sketched a less optimistic view of the net customer win-rate [top-left], and run the model to show you the impact on passengers, journeys, revenue and profits.



It looks like hitting your revenue and profit forecasts could be tougher than you hoped!

Visit www.stratgydynamics.com/mystrategy for more information about the mystrategy® software and the sample model that accompanies this example.

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