



## Ivan Hurst Consulting

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**Quantity Surveying**

**Cost Management**

**Cost Planning**

**Change Management**

**Estimating**

**Procurement**

**Dispute resolution**

**Audit**

**Planning**

**Other services**

Ivan and his team have accrued considerable experience over the years and can clearly demonstrate competency and capability in all of the above areas of our service offering.

We would be happy to discuss with you how we can assist you within any or all of the above areas.

Ivan Hurst Consulting

Competency Statement – Cost Planning

Complex Cost Modelling

Capabilities

**Quantity Surveying**

**Cost Management**

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Achieving excellence

# Bespoke complex models for you

Connecting your requirements to the solutions you need



Ivan has a particular aptitude for working with spreadsheets and databases. His logical mind fits well with the structured approach of Microsoft software. Ivan has a tendency to take a simple spreadsheet and turn it into something more complicated. However, during this development, the user interface is improved, data integrity is ensured and input of the same information is only done once, thereby improving efficiency and accuracy.

The resultant spreadsheet is more transferable than the original and reduces reinventing the wheel with every new user. It can be sent to multiple users in different locations and subsequently have the various results collated with ease. It offers a consistent approach, which in turn enhances efficiency, accuracy and quality. Excellence in action.

## Cost Planning

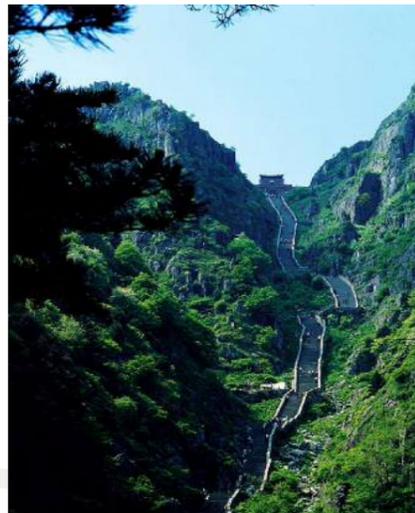
- Cost Modelling
- **Complex Cost Modelling**
- Maintenance costing
- Whole life costing
- Inflation calculations
- Internal rates of return and returns on investments.
- Write down periods and values.

## Experience

Ivan has devised, constructed and completed a number of Complex Cost Models to meet specific client requirements. They range in value and coverage to over £1,000m and short term to 50 years strategies.

Ivan has also been commissioned as an 'External Expert' to review and assess other peoples complex cost models and resultant budgets and strategies.

Focus has to be on the end goal, the information required. The steps to get to the information can then be created, in a modular way to lead from the existing information.



## Approach

An essential part of Ivan's approach to constructing complex models is establishing the fundamental requirements of the client. Only once the requirements have been fully understood can the solution to providing the information be devised. Frequently the client knows the intent of his requirement but not the detail. This is anticipated, and is dealt with by continual dialog about the tool being created and by adopting a modular approach to the development of the bespoke model.

Ivan's experience has also taught him not only to use a modular, process oriented approach but also to separate the model into three distinct segments. This applies irrespective of the number of spreadsheets utilized in the creation of the Complex Cost Model. The segments are 'User front end (input)', 'The Engine', and the 'Reports' (Output).

# flexible solutions for your business needs

## Complex models to aid decision making

Another example of Ivan's creation of Complex Cost Models was also for London Underground, but under different circumstances. London Underground anticipated that one of the PPP contractors would seek an Extraordinary Review to be carried out by the PPP Arbiter.

In preparation for this they requested a 'should cost' value of the station regeneration programme in respect of the first control period.

The first part of the process was to estimate the cost of a selection of six stations. (done by others in the team).

Ivan again adopted a modular approach. Desktop studies and data trawls established various parameters for all of the stations on the network. These parameters were collated into groups including size, number and configuration of platforms and tracks, number of intersections, vertical and geographic location, history and the like. The data was correlated into a complexity index.

The workbank consisted of differing interventions within three categories; refurbishment, extended refurbishment, and modernization. The complexity index was artificially split into three categories using sliders and sensitivity checks. This combined with intervention categories provided a matrix of potential stations. Further estimates of station 'should cost' were undertaken with a view to providing one example in each element of the matrix.

Using the first six, and then nine station 'should cost' estimates, the impact of the parameters on the overall cost drivers was established. This was tested and fine tuned using the remaining stations. Further tests were carried out using regression analysis and @Risk profiling.

Being able to confidently predict the cost of the estimated stations gave confidence that the predicted cost of the workbank was, within tolerance, accurate.

Due to the potential impact, the model was subjected to intense scrutiny prior to the results being adopted and used.

## Examples

Each Complex Cost Model is created specifically for the particular task as each client requirements tend to be unique.

For London Underground Ivan created a Complex Cost Model to compare cost benefits of adopting different methodologies regarding track renewals across the whole of the underground network for the following 50 years. The solution was to be procurement route neutral and the base information at resource level.

Part of the initial input was a download of the Primavera programme data of the potential workbank which included the current level of deterioration of the asset by category. The model carried out several checks to establish the integrity of the incoming data. Several core methodologies were developed for renewal of track in differing circumstances. The build up was based on individual resources down to a level of detail of a person hour, or sleeper clip.

All of the resources were held in a central library where the rates could be adjusted for circumstances, market forces and inflation. Each of the build ups had outputs and possession numbers controlled by sliders. New or specialist plant rates were built up from first principles including differing financing options, selected by radio buttons, various write down and depreciation periods, controlled by sliders. The cost also included NPV calculations. The final plant rate included utilization information which was linked to the programme and the methodologies selected.

A matrix of various methodologies were applied to the workbank which gave an overall cost and time output. Several iterations were run with a different matrix to provide comparisons of differing renewals strategies.

Outputs included reports, core data and export data for transfer back to Primavera. The results were presented to the London Underground Board and formed part of the future strategy.