

SCAF conference Case Study Workshop

1 Overview

At the April 2012 SCAF Workshop the SCAF committee propose to set a challenge for the costing community. We will run a participative training session in cost estimating based upon the International Society of Parametric Analysts (ISPA) conference Renew Your Training (RYT) format.

2 Purpose

The purpose of this workshop is to provide a participative training session in cost estimating conducted by professional estimating teams from academia, industry, tool vendors and consulting with the added benefit of top-level critique by senior government and industry executives. This program will be instructive, entertaining, and suitable for a wide interest audience (estimators as well as managers).

The workshop ethos will be;

- Presentations will be conducted in a non-hostile atmosphere.
- All observations will be focused on the methodology and approach, rather than the absolute cost accuracy.
- This is a learning exercise for the Teams and the audience.
- Team should seek ways to demonstrate its innovation, experience, and presentation skills.
- It is SCAF's preference that **younger members of staff** are used for the exercise, rather than 'veterans' of cost estimating, to provide a valuable opportunity for 'the next generation' to gain experience.

3 Background

The ISPA Certified Parametric Practitioner (CPP) accreditation can be achieved by attending the ISPA annual conference training sessions and sitting the 3 hour examination. The UK MoD has been up-skilling its cost forecasting (CF) staff through this accreditation. Cost Assurance and Analysis Service (CAAS) have conducted 3 training courses in the UK taught by MCR and QinetiQ.

The training provides a high level overview of the ISPA parametric handbook issue 4, understanding, detailed explanation, teaching and hands-on exercises. The outcomes are cost forecasting staff able to appreciate the application and development from first principles parametric models.

4 The Challenge (Problem)

You are the Chief Cost Estimator at an automobile company and have been gathering technical and price information on cars for a number of years. You have been approached by the head of sales and marketing with a request to produce price information quicker. The company has a strategy to produce more tailored vehicles for the consumer as a result the head of sales and marketing would like to equip forecourt sale staff with a quick pricing tool rather than the price list that is presently used.

Having recently acquired ISPA Certified Parametric Practitioner (CPP) status you feel confident that you will be able to produce a parametric estimating model for the purpose.

Using the technical and price data in the annex of this case study brief, the objective is to prepare a parametric model for the estimation of commercial vehicles.

The study output should cover:

- approaches to data gathering
- data normalisation
- data analysis
- presentation of the parametric model
- the effects of uncertainty in the data on the parametric model

The objective is not so much to prepare accurate and realistic estimates, but to describe the approach to this task and how the task has been conducted. It is reminded that the Team members should not disclose proprietary information.

They may use and display public domain models or even invent some models for the purpose of the exercise. If so, the Team will indicate it in order to avoid the audience from being misled.

There is no pass or fail and certainly no “right answer.” We strive to keep the estimating spirit alive and to present a good cross-section demonstration of how world-class estimators approach the issue of analyzing data and producing parametric models.

5 General Estimating Assumptions:

1. Production price should be the dependent variable in the parametric model. Any other costs (development or Operating and Support) would be welcome.
2. This should be a parametric model, not a simple lookup table.
3. Uncertainty and risk distributions should be considered
4. The teams will not be limited to data provided by SCAF (see below) and may supply their own insight into future technologies and price projections.
5. The team should offer a worked example of their parametric model.
6. The output of the parametric analysis should be a case study of the team choosing to demonstrate the application of the parametric model.
7. The team should make assumptions about cost and performance relationships.
8. Technology forecasting, augmenting assumptions, and innovative estimating are encouraged

6 Assessment

During the 24th April 2012 workshop, expert Estimating Teams will each present their solution to this estimating challenge. The presentation and case study will be reviewed by an expert panel. SCAF will convene a Senior Review Panel that will review the offerings.

The Senior Review Panel will review each oral presentation, ask questions for clarification, and compile an overview, which will be interesting and informative to the general conference audience in the final session of the workshop. The critique will focus on methodology, processes, presentation style and some lessons learned for others to emulate and not on the accuracy of the cost estimate.

7 Format and Schedule:

The results of this case study will be in MS Office (PowerPoint and Excel) format, presented in 30 minutes by one or more team presenters with 10 minutes for questions and answers from the Senior Review Panel and audience. It will include the following topics, as a minimum:

1. Purpose and scope of the estimate - understanding of the problem space.
2. Parametric approach;
 - a. Assumptions and exclusions
 - b. Data source
 - c. Data normalisation
 - d. Data analysis technique
 - e. Model creation and build
3. Application of the model will be demonstrated through a case study
4. Price forecast (price in 2011 £) with:
 - a. Manufacturing Cost
 - b. uncertainty adjusted estimate summary, showing price and rationale
 - c. explanation of the figures presented
5. Additional ground rules and assumptions (to the extent they impact the estimate)
 - a. Assumptions and Exclusion with justification
 - b. Any Price - Performance trade-offs
 - c. Choice of techniques necessary to justify your estimate
 - d. Calibre and experience of your team
6. Decision, and rationale, as to how the task was conducted to show that your team has conducted the optimum study.

Out of fairness to all, we will request that teams do not present any classified or proprietary information, to avoid showy or unusually ostentatious presentations, and to agree to limit their team estimating efforts (exclusive of time spent at the workshop presenting their material), to not more than 40 person-hours total. Most teams have indicated they will accomplish the analysis on their own (as opposed to company) time.

The SCAF committee would like to remind Team members that the use of an organisation's PowerPoint template and a single marketing/capability slide regarding their organisation will be the maximum marketing necessary.

8 Contact

Interested team leaders should contact **Arthur Griffiths** at DAS (ArthurGriffiths@das-ltd.co.uk) and **Dale Shermon** at QinetiQ (DShermon@QinetiQ.com) to enter a team.

Model	Specification	Number of doors	Body	Fuel	Engine capacity (litres)	Engine power (bhp)	List Price (£)
Focus	Edge	5d	Hatch	Petrol	1.6		£16,000
Focus	Edge	5d	Hatch	TDCi	1.6		£16,995
Focus	Edge	5d	Hatch	TDCi	1.6	(115bhp)	£17,495
Focus	Zetec	5d	Hatch	Petrol	1.6		£17,000
Focus	Zetec	5d	Hatch	TDCi	1.6	(115bhp)	£18,495
Focus	Zetec	5d	Hatch	TDCi	2.0		£19,495
Focus	Zetec Powershift	5d	Hatch	TDCi	2.0		£20,750
Focus	Zetec	5d	Hatch	Petrol	1.6	(125bhp)	£17,500
Focus	Titanium	5d	Hatch	Petrol	1.6	(125bhp)	£18,750
Focus	Titanium	5d	Hatch	TDCi	2.0		£20,745
Focus	Titanium Powershift	5d	Hatch	TDCi	2.0		£22,000
Focus	Titanium	5d	Hatch	TDCi	1.6	(115bhp)	£19,745
Focus	Titanium	5d	Hatch	Petrol	1.6	EcoBoost	£19,750
Focus	Titanium X	5d	Hatch	Petrol	1.6	EcoBoost	£21,250
Focus	Titanium X	5d	Hatch	TDCi	1.6	(115bhp)	£21,245
Focus	Titanium X	5d	Hatch	TDCi	2.0	(163bhp)	£22,745
Focus	Titanium X Powershift	5d	Hatch	TDCi	2.0	(163bhp)	£24,000
Fiesta	Style	3d	Hatch	Petrol	1.25		£11,554
Fiesta	Style	5d	Hatch	Petrol	1.25		£11,867
Fiesta	Style	3d	Hatch	Petrol	1.25	(82ps)	£12,191
Fiesta	Style	5d	Hatch	Petrol	1.25	(82ps)	£12,504
Fiesta	Studio	3d	Hatch	Petrol	1.25		£9,995
Fiesta	Studio	5d	Hatch	Petrol	1.25		£10,595
Fiesta	Studio	3d	Hatch	Petrol	1.25	(82ps)	£10,595
Fiesta	Studio	5d	Hatch	Petrol	1.25	(82ps)	£11,195
Fiesta	Studio	3d	Hatch	TDCi	1.4	(70bhp)	£11,945

Model	Specification	Number of doors	Body	Fuel	Engine capacity (litres)	Engine power (bhp)	List Price (£)
Fiesta	Studio	5d	Hatch	TDCi	1.4	(70bhp)	£12,545
Fiesta	Zetec	3d	Hatch	Petrol	1.25	(82ps)	£12,195
Fiesta	Zetec	5d	Hatch	Petrol	1.25	(82ps)	£12,795
Fiesta	Zetec	3d	Hatch	Petrol	1.4		£12,800
Fiesta	Zetec	3d	Hatch	Petrol	1.4	Auto	£13,805
Fiesta	Zetec	5d	Hatch	Petrol	1.4		£13,400
Fiesta	Zetec	5d	Hatch	Petrol	1.4	Auto	£14,405
Fiesta	Zetec	3d	Hatch	TDCi	1.4	(70bhp)	£13,545
Fiesta	Zetec	5d	Hatch	TDCi	1.4	(70bhp)	£14,145
Fiesta	Zetec	3d	Hatch	TDCi	1.6	(95bhp)	£14,145
Fiesta	Zetec	5d	Hatch	TDCi	1.6	(95bhp)	£14,745
Fiesta	Zetec S	3d	Hatch	TDCi	1.6	(95bhp)	£15,145
Fiesta	S1600	3d	Hatch	Petrol	1.6	(134bhp)	£15,900
Fiesta	Titanium	3d	Hatch	Petrol	1.4		£13,800
Fiesta	Titanium	3d	Hatch	Petrol	1.4	Auto	£14,805
Fiesta	Titanium	5d	Hatch	Petrol	1.4		£14,400
Fiesta	Titanium	5d	Hatch	Petrol	1.4	Auto	£15,405
Fiesta	Titanium	3d	Hatch	Petrol	1.6		£14,400
Fiesta	Titanium	5d	Hatch	Petrol	1.6		£15,000
Fiesta	Titanium	3d	Hatch	TDCi	1.4	(70bhp)	£14,545
Fiesta	Titanium	5d	Hatch	TDCi	1.4	(70bhp)	£15,145
Fiesta	Titanium	3d	Hatch	TDCi	1.6	(95bhp)	£15,145
Fiesta	Titanium	5d	Hatch	TDCi	1.6	(95bhp)	£15,745

Source: www.parkers.co.uk