

Diary of an Oil Market Model:

How an interactive system dynamics modelling process was used with Shell managers to resolve conflict and to generate insight

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Abstract - Managers involved in the refining and trading of oil had conflicting views on the relationship between output and cash generation in their market. A day by day account is given of a project in which the market was modelled. The models ostensibly represented the view of the Refining Strategy staff but consultation with other individuals allowed the views of the local Trading department to be represented too. The tools of system dynamics were used to articulate assumptions and to support a 'dialogue' in which disagreements regarding macro-behaviour were transformed into debates over specific relationships. The repeated re-crafting of a STELLA model led to alterations in the understanding that the refining managers had of the key variables and of their dynamic interaction. In consequence, the participants aligned behind a single view of the market's behaviour, as well as admitting to increased respect for the expertise of the other group.

AUTHOR'S NOTE

This paper concerns the process of construction of an oil market model.

To try to give a sense of the evolution of the model and also a glimpse of the changing thinking of those involved, I have chosen to use the format of a diary. I hope that this displays the participants not as elements of an organisational chart but as characters, real people facing problems and uncertainties who make contingent, boundedly rational decisions. It may also help to convey the frustrations and disappointments, the pleasures and the satisfactions of one example of system dynamics modelling.

However, the page length necessary to contain the day-by-day account and to provide the numerous figures of the different forms of the model exceeds the Conference Proceedings requirement. I have therefore chosen not to provide a truncated version of the paper but rather to provide a full version at the Conference presentation in the form of an LSE Working Paper. Further version are available from me the above address.

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