

Practical issues facing UK transport modellers today

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Objective

- My aim is to sketch out an agenda for improvements in modelling, especially (but not exclusively) in the current context of Road User Charging
- This is my agenda, but a number of the issues will, in fact, be discussed by others today

Some Key items

- Dynamic assignment and micro time of day choice
- Deriving base matrices on P/A basis
- Managing supply/demand convergence in Variable Demand Modelling
- Introducing income segmentation
- Introducing reliability

Dynamic assignment and micro time of day choice

- Demand models typically deal with larger periods, but assignment models nearly always deal with peak hour
- Peak period to peak hour factors are likely to change over time (“peak spreading”)
- This is essentially a dynamic problem, and requires tools that go well beyond standard assignment
- Practical procedures need to deal with the build-up of congestion **and** changes in departure time

Deriving base matrices on P/A basis

- “Incremental” demand models (recommended in WebTAG) require base matrices, but they must be P/A
- Standard techniques for “matrix estimation” work with O-D matrices, as required for assignment
- There is virtually no guidance as to how P/A matrices should be built
- Practical Procedures are needed to integrate synthetic matrices with observed O-D movements and counts

Managing supply/demand convergence in VDM

- The emphasis on variable demand modelling requires an iterative process between demand and assignment
- Practical experience in achieving convergence within acceptable run time remains limited
- Poorly converged models can lead to quite misleading results

Introducing income segmentation

- It is a “core requirement” for TIF to have income segmentation
- For incremental demand models, this implies that base matrices must be segmented by income
- Because of the interrelationship with car availability, mode, person type and purpose, this is complex
- In addition, the income data available at the local level is very variable

Introducing reliability

- It is generally agreed that improvements in travel time reliability are at least as important as improvements in travel times
- **Some** progress has been made in valuing reliability, which would allow reliability to be included in demand models
- The more difficult task is to **predict** the impact on reliability, either from changes in demand, or due to specific measures

Challenges!

- These are all challenging topics, which will take some time translate into practical procedures.
- But you can get a flavour of developments in some of these areas....