

# **Valuing travel time savings in the face of worthwhile use of travel time**

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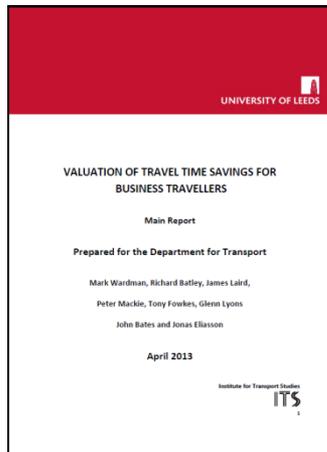
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# Until October 2013...

“Time spent travelling during the working day is a cost to the employer’s business. It is **assumed that savings in travel time convert non-productive time to productive use** and that, in a free labour market, the value of an individual’s working time to the economy is reflected in the wage rate paid”

DfT (2012). *Values of Time and Vehicle Operating Costs TAG Unit 3.5.6*. Department for Transport, August.



Wardman, M., Batley, R., Laird, J., Mackie, P., Fowkes, T., Lyons, G., Bates, J. and Eliasson, J. (2013). *Valuation of travel time savings for business travellers*. Prepared for the Department for Transport, April.



# Questions, questions

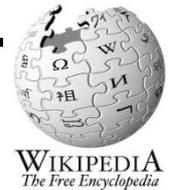
- Is all your travel time wasted and unproductive?
- Do you make some productive use of your time when travelling?
- Would a quicker journey impinge on your travel time use?
- Are some things *better* done when you are on the move?
- Can you judge your *relative* productivity in different settings?
- Is your travel time use for you or for your employer?
- Is 'down time' while travelling 'wasted time'?
- What would you do with time saved by a journey being quicker?
- Do your answers depend upon the length of journey, how often you make it and on the purpose of your journey?
- Are your answers likely to change over time in the face of the digital age?

# A wicked problem



<http://www.islandbreath.org/2011/05/110502wicked.jpg>

"**Wicked problem**" is a phrase originally used in social planning to describe a problem that is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize. The term "wicked" is used to denote **resistance to resolution**, rather than evil. Moreover, because of **complex interdependencies**, the effort to solve one aspect of a wicked problem may reveal or create other problems.



# Overview

- Introducing the wicked problem ✓
- Current approaches to valuing travel time savings
- Meanings of travel time
- Empirical insights
- Reflections on the wicked problem
- Contemplating ways forward

# Current approaches

Cost Saving – all saved time has value based on average wage rate for mode

Hensher – seeks to account for travel time use through key terms:

**p** – proportion of travel time saved at the expense of productive work travel time

***p\**** – *proportion of overall travel time spent working*

**q** – relative productivity of work done whilst travelling relative to the workplace

**r** – proportion of saved travel time used for leisure

Willingness to Pay (WTP) – people convey through revealed and stated preferences the 'exchange rate' between time and money

# Meaning of travel time

- Time as a 'gift' to the traveller – time out and transition time
- Clock time versus experienced time – stretching and compressing experienced time
- Task-oriented concept of time - decoupling ownership of time from journey purpose
- No effective and practical means of measuring knowledge worker productivity



[http://cdn.sheknows.com/articles/2012/04/sarah\\_parenting/mom-me-time.jpg](http://cdn.sheknows.com/articles/2012/04/sarah_parenting/mom-me-time.jpg)

# Challenges (1 of 2)

- Is the cost savings approach defensible in the face of the digital age and the knowledge economy?
  - Mixed views; effects possibly absorbed by wage rate changes
- Does the Hensher approach lend itself to sufficiently accurate calibration?
  - Has proved difficult and 'sufficiency' is contestable
- Can we assume that WTP implicitly and sufficiently captures effects of productive or worthwhile use of time?
  - Contestable in approaches to date but possible to achieve

# Challenges (2 of 2)

- Are Hensher and WTP approaches 'future proof' set against a 60-year appraisal horizon?
  - Contestable if not doubtful unless values assumed to change with time
- Is journey purpose an appropriate means to determine which approach to use?
  - Increasingly less so

# Empirical insights - Hensher

- 11 studies identified: Australia, UK (3), Netherlands (3), Sweden, Norway, New Zealand, Switzerland
- $p^*$  - *proportion of overall business travel time spent working*  
Car 0.02-0.22; Bus 0.03-0.17; Air 0.07-0.36; Train 0.11-0.46  
Within each study: train > air > bus > car
- $q$  - *relative productivity of work done whilst travelling relative to the workplace (sometimes capped at 1)*  
Car 0.90-1.20; Bus 0.83-1.26; Air 0.99-1.02; Train 0.89-1.15\*
  - indifference to working environment?
  - Ambivalence/inability in judging relative productivity?
- Limited depth of analysis within studies and limited attempts to compare with existing studies
- Limited insight into crowding effects and limited evidence of change over time in the absence of like-for-like comparison

\* Excludes two studies with very low values

# Further empirical insights

- In GB from 2004-2010: increase in the proportion of business rail travellers making very worthwhile use of their travel time (34% up from 28%)
  - allied to greater availability and use of mobile technology
  - similar insights from 2008 Norwegian study (27% of rail commuters having travel time approved as working hours)
- Recent UK study of car drivers travelling for work reveals extensive use of phones and common indication of using driving time to think about work
- Recent Swedish study examining employer perspective suggests no explicit expectations about work during travel time but expectation of “getting one’s work done in a satisfactory way”

# WTP insights

- Across 14 national value of time studies: large systematic variations in value of time according to person and trip characteristics with key drivers being: income, distance, purpose and mode
- Lack of explicit testing of variables which expressly represent the worthwhile use of time
- A number of exact repeat studies have allowed examination of variation of value of time over time:
  - Indication of values reducing in real terms providing *some* support for the assumed effect of increasing opportunities over time for worthwhile use of time

# October 2013 onwards

## Values of Time and Vehicle Operating Costs

### TAG Unit 3.5.6

October 2013

Department for Transport

Transport Analysis Guidance (TAG)

IN DRAFT

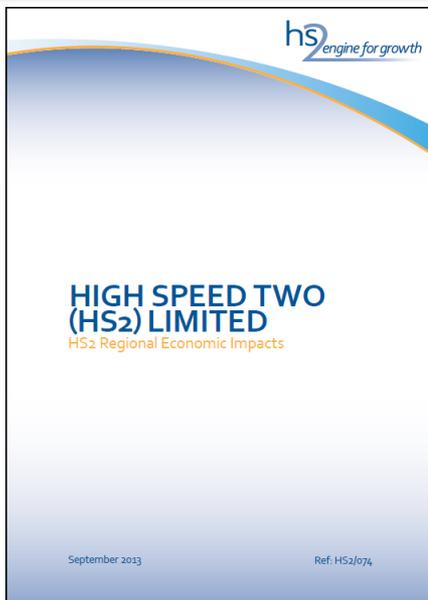
“The wide range of values resulting from different approaches...shows the uncertainty around the values of travel time savings in the course of work”

“Due to the uncertainties and inconsistencies in the existing evidence, the Department believes that fresh empirical evidence on business travellers’ willingness-to-pay for travel time savings is required.”





Although the analysis draws on some of the same inputs as conventional appraisal methods, it does not seek to value travel time and cost changes directly. Instead, it aims to understand how these changes to travel times and costs influence regional economic performance, both in terms of overall economic productivity and the location of economic activity. The analysis provides an **alternative approach to** conventional transport appraisal and the estimated net benefits should not be considered as comparable or additional to those estimated by conventional appraisal



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### HS2 benefits 'essentially made up', economists tell MPs

Leading academics question figures used to justify £50 billion high speed rail scheme in evidence to Treasury Select Committee

<http://www.telegraph.co.uk/news/uknews/road-and-rail-transport/10427468/HS2-benefits-essentially-made-up-economists-tell-MPs.html>

# Strategies to solve wicked problems

- **authoritative** – vesting the authority for producing a solution in the hands of a few stakeholders
- **competitive** – different constituencies come up with different solutions – competition may drive improved solutions
- **collaborative** – enabling different constituencies and viewpoints to work together towards improved accomplishment (but with increased 'transaction costs')

# Ways forward

- Ensure a **collaborative** strategy regardless...
- Plan A – Abandon economic appraisal based on savings in travel time
- Plan B – Establish a **repeatable** WPT methodology that stands up to **multidisciplinary scrutiny** that allows tracking and projection of changes in values of travel time savings **over time**
- Plan C – KISS +Caveat emptor: concede that valuation is a wicked problem that warrants a **simple approximation** passed with '**buyer beware**' to the policymaker who must ultimately make a difficult investment decision
- Plan D – Crowd source new ideas

