# Contents

<table>
<thead>
<tr>
<th>Reports of meetings</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation of the 26-30 Railcard Pilot</td>
<td>1-7</td>
</tr>
<tr>
<td><em>John Segal and Jenny Taylor</em></td>
<td></td>
</tr>
<tr>
<td>The economic impacts of HS1 in Kent</td>
<td>8-15</td>
</tr>
<tr>
<td><em>Helen Simpson</em></td>
<td></td>
</tr>
<tr>
<td>Alternative institutional structures for airports</td>
<td>16-27</td>
</tr>
<tr>
<td><em>Ivan Viehoff</em></td>
<td></td>
</tr>
<tr>
<td>Review: The Motorway Age: How post-war governments responded to rapid traffic growth, by David Starkie</td>
<td>28-31</td>
</tr>
</tbody>
</table>

TEG Committee 2019-2020

Details of meetings are provided on our website at [http://www.transecongroup.org/meetings.htm](http://www.transecongroup.org/meetings.htm)
Evaluation of the 26-30 Railcard Pilot
John Segal and Jenny Taylor, SYSTRA
Arup
24 April 2019

Introduction
The 26-30 Railcard (“The Millennial Railcard”) went on sale on 2 January 2019 and was met by high initial demand. The new railcard offers similar benefits to the existing 16-25 Railcard. It costs £30 and offers a saving of one third on off-peak rail fares throughout Great Britain, including Standard and First Class Advance fares, for a year. To be eligible, passengers must be aged 26-30 and have a smart mobile device.
The Rail Delivery Group (RDG) commissioned an evaluation of the pilot of the 26-30 Railcard and its projected impact on travel behaviour.

Background
The study team began the presentation by explaining that Railcards were introduced by British Rail in the 1980s. Customers purchase a Railcard offering discounted rail travel for a fixed amount per year (most are £30). Most Railcards offer a discount of 34% (or one-third off) at off-peak times. The principal Railcards are:

- Senior (age 60+);
- 16-25 (previously Young Persons, and before that Student);
- Family and Friends;
- Two Together;
- Disabled Persons;
- HM Forces; and
- Network and Gold Card (valid in wider South East area).

The Railcards are intended to be profitable as a means of revenue generation. They can be used to target more price-sensitive segments of the market, where the price elasticity is over -1.
They also encourage loyalty through having paid in advance. The principal Railcards are regulated by the Department for Transport (DfT). Specific requirements for some Railcards, such as Disabled Persons and HM Forces, are inherited from British Rail. Railcards are regularly monitored by RDG and previously by ATOC.

**The 26-30 Railcard**

When 16-25 Railcards were introduced, people aged over 26 were generally in employment and increasingly more affluent. Nowadays 26-30 year-olds are no longer so affluent because of student loans and high housing costs. The new card is separate from 16-25 Railcards in order to have slightly different and simpler conditions, and the intention is that the 26-30 Railcard will not be regulated by DfT, so that it can be withdrawn if not successful. The 26-30 Railcard was introduced in two phases:

- A maximum of 10,000 Railcards were sold in one geographic area.
- Later, 10,000 Railcards were sold nationally in March 2018.

**Evaluation methodology**

Surveys were conducted as part of the study.

A long initial survey was sent to all respondents after they had owned the Railcard for about a month. This received 2,196 responses from Greater Anglia and 2,947 responses from a national survey. Short monthly surveys were sent out to all who completed the initial survey. There were around 900 responses per month from Greater Anglia and around 1,300 responses per month from the national survey. A final survey was sent, asking respondents who had owned the Railcard for a year about travel over the whole year.

In each monthly survey, the core survey questions included:

- How many journeys have you made in the past month in each of six regions?
- How many journeys would you have made in the past month (in each of six regions) if the 26-30 Railcard wasn’t available?
Every three months, questions also sought details about the last journey the individual made, including:

- If the 26-30 Railcard were unavailable, would you have still travelled by rail, made the journey by another mode, such as car or bus, or not made the journey at all?

- Would you have bought tickets to travel as planned without using a Railcard, bought tickets to travel as planned using a different Railcard, or changed your travel plans to get a cheaper ticket type (for example, bought an Advance ticket or made the journey during off-peak times of day)?

Revenue models were established to investigate the impacts of the 26-30 Railcard using different datasets. Revenue was calculated from trips that would have been made if the Railcard wasn’t owned (abstractive), and for new trips from owning a Railcard (generative), based on either the last rail trip or all rail trips made in the past month (or year) using their Railcard. The analysis took into account impacts on other Railcards such as Two Together and Network. The models did not take into account any additional costs from carrying extra passengers, as the product is only available off peak. The models use data from LENNON, which gives Britain’s rail ticket sales accounting data, using 16-25 and 26-30 Railcard ticket sales and average fares.
The data was scaled to provide national values using an estimate of the number of 26-30 Railcards that would be purchased, based on the number of 16-25 Railcards currently owned by 24- and 25-year-olds. The study collected data and asked questions in different ways to maximise the understanding of how people behave. A 25% reduced generation sensitivity test was undertaken, to provide a range for the revenue impacts and account for potential survey bias.

*Figure 2: Snapshot of the Revenue Model (example numbers)*

<table>
<thead>
<tr>
<th>Weighting</th>
<th>Railcards sold (scaled)</th>
<th>Abstracted trips</th>
<th>Generated trips</th>
<th>Average yield with Railcard</th>
<th>Factor for yield without Railcard</th>
<th>Revenue with Railcard</th>
<th>Abstracted revenue</th>
<th>Net travel revenue</th>
<th>Revenue including from Railcards</th>
<th>Revenue per Railcard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resp. 1</td>
<td>50</td>
<td>500</td>
<td>10,000</td>
<td>3,000</td>
<td>£10</td>
<td>£130,000</td>
<td>£140,000</td>
<td>-£10,000</td>
<td>£5,000</td>
<td>£10</td>
</tr>
<tr>
<td>Resp. 2</td>
<td>30</td>
<td>300</td>
<td>7,000</td>
<td>2,500</td>
<td>£9</td>
<td>£85,500</td>
<td>£85,050</td>
<td>£450</td>
<td>£9,450</td>
<td>£32</td>
</tr>
<tr>
<td>Resp. 3</td>
<td>40</td>
<td>400</td>
<td>6,000</td>
<td>2,800</td>
<td>£8</td>
<td>£70,400</td>
<td>£69,600</td>
<td>£800</td>
<td>£12,800</td>
<td>£32</td>
</tr>
<tr>
<td>Total</td>
<td>1,200</td>
<td>23,000</td>
<td>8300</td>
<td>8300</td>
<td>£8</td>
<td>£285,900</td>
<td>£294,650</td>
<td>-£8,750</td>
<td>£27,250</td>
<td>£23</td>
</tr>
</tbody>
</table>

There is one row per respondent, each of whom has a weighting dependent on frequency of surveying. Abstracted and generated trips depend on survey responses. Yields are from LENNON and from what respondents said they would do if they did not have a Railcard.

Alternative approaches to identify the impact were by asking different questions in order to ensure robustness of results. The results were analysed by geographic sector and journey purpose.
The results of the study are summarised in Table 1.

**Table 1: significant increase in travel revenue**

<table>
<thead>
<tr>
<th>Greater London</th>
<th>South East to/from London</th>
<th>Other South East</th>
<th>Long distance to/from London</th>
<th>Short distance other (&lt;1 hour)</th>
<th>London distance other (&gt;1 hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lost travel revenue is not quite compensated by revenue for sale of the Railcard.</td>
<td>Lost travel revenue is compensated by revenue for sale of the Railcard, giving slight overall profit.</td>
<td>Profitable even before taking into account sales of Railcards.</td>
<td>Travel revenue neutral; profitable when Railcard sales taken into account.</td>
<td>Most profitable sector.</td>
<td></td>
</tr>
</tbody>
</table>

The results are provided for a single steady state year and are based on sales of Railcards estimated for that year. The analysis assumes that the initial purchasers are typical of all purchasers, and does not take account of any ramp-up in the take-up of the Railcard. The 26-30 Railcard was estimated separately from experience with the Two Together Railcard.

The alternative approaches gave comparable results in terms of:

- journey reported in final survey;
- use of last journey; and
- analysis by journey purpose.

A sensitivity test of 25% lower generation significantly reduced profitability, but still gave a small increase in travel revenue. The product remains profitable when Railcard sales are taken into account; but it must be noted that this excludes any impact on operating costs.

**Overall findings**

The study concluded that the 26-30 Railcard is profitable for all models developed. The preferred model used all travel in the past month (summed over all months). Given LENNON data availability, analysis is more reliable by geographic sector than by purpose.
There is positive net revenue per year after allowing for loss of Network Railcard and Two Together Railcard sales.

Long-distance trips are most profitable, with travel revenue losses for short-distance trips involving London.

Business and commuting trips are generally loss-making, while leisure trips are revenue generative.

**Discussion**

Christel Hengeveld (Arup) asked if the “loss of the revenue in the Greater London area” took into account the Transport for London (TfL) travel discount. John explained that the study did consider the TfL Rail discount, but did not include London Underground impacts.

John Cartledge noted that the survey response rate was higher from females than males, as is the case for the National Travel Survey, and asked if the proportion of rail revenue from discounted railcards could be provided? Also, was there any survey in relation to privileged travel for rail staff? John replied that this information was not available from the study.

Simon Keller (Jacobs) asked if fare reform has been considered in the study. John clarified that it was not.

Jo Quill (ORR) asked about new rail users. John explained that the Railcard does not really target non-rail users: it is much more likely to increase trip frequency for existing users. The study therefore did not look at non-rail users.

Hannah Norman (Arup) asked whether there were any plans to review the study. John replied that he was not sure of any immediate plans, although ATOC has previously repeated similar studies every few years, so there was the possibility that the study might be repeated in the future.

Peter Gordon (Editor, *The Transport Economist*) asked if the study had examined any restrictions on the Railcard? John explained that, as with most other Railcards, there are some restrictions in the AM peak.

Someone asked what the speakers thought of single leg pricing (SLP). John explained that Railcards don’t conflict with it.
Hannah Norman asked if there were any advantages of adopting a Swiss-style pricing system where residents get 50% off. Peter Gordon suggested that the problem for the Swiss system is that the full price for rail fares are too high. John replied that he did not consider the Swiss system a good model to adopt, as it mainly subsidises business travel.

Gregory Marchant (TEG) asked whether the study had examined the travel behaviour of people who bought 26-30 Railcards. John said that it had not done so.

Report by Iris Ning
The economic impacts of HS1 in Kent
Professor Helen Simpson, University of Bristol
Arup
22 May 2019

Introduction
The speaker described a paper that she had written with her colleague Stephan Heblich on “Commuting fast and slow: the effects of high-speed rail”.

The results of the work are still preliminary, and subject to change, so should not be quoted or cited.

The project was designed to assess the effects of reductions in commuting times. It exploited the introduction of high-speed rail commuter services in the South East of England in 2010 and provided descriptive evidence on household location choices and business performance. The findings have potential implications for who gains and who loses from such transport investments.

The work combined spatial data on changes in commuting times into the City of London with data on house prices, Census data on demographics, and plant-level data on employment, entry, exit, sales, labour productivity and wages.

Household responses showed evidence that decreases in travel times to London are associated with increases in population, particularly of skilled people in the areas served by the route, increases in house prices, and changes in employment and the occupational composition of residents.

Shorter travel times to London were also found to be associated with stronger performance by local firms in terms of higher labour productivity, value-added, employment and average wages. This pattern may be driven in part by sorting, with poorer performing plants exiting owing to increased labour and land costs and stronger competition. This has potential implications for policies which move a relatively peripheral area “closer” to a major agglomeration.
Figure 1 shows predicted travel time decreases resulting from the service estimated prior to its introduction in 2003 and 2007.  

Figure 1: HS1

http://www.lcrhq.co.uk/media/cms_page_media/32/HS1.final.report.pdf

From 1994 to 2003, international Eurostar services between Paris, Brussels and London travelled at normal speeds for the UK into Waterloo. HS1 upgraded the UK part in two stages with the line as far as North Kent opening in September 2003 and the full route to St Pancras following in November 2007. Domestic services were launched partially in June 2009 and fully in 2010.

HS1 significantly reduced commuting times between Kent and Central London, with a consequent widening of the geographic markets for labour, amenities and consumer spending.

Table 1 shows the weekly season ticket premium for high speed services: 35% from Gravesend and 20% from Ashford.
Table 1: HS1 preview fares

<table>
<thead>
<tr>
<th></th>
<th>Peak single</th>
<th>Off-peak return</th>
<th>Peak return</th>
<th>Weekly season</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ebbsfleet International - St Pancras International</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mainline (from Gravesend)</td>
<td>£9.10</td>
<td>£9.30</td>
<td>£18.00</td>
<td>£61.00</td>
</tr>
<tr>
<td>High Speed</td>
<td>£12.20</td>
<td>£12.50</td>
<td>£24.30</td>
<td>£82.30</td>
</tr>
<tr>
<td>Supplement</td>
<td>£3.10</td>
<td>£3.20</td>
<td>£6.20</td>
<td>£21.30</td>
</tr>
<tr>
<td>Percentage premium</td>
<td>34%</td>
<td>34%</td>
<td>34%</td>
<td>35%</td>
</tr>
<tr>
<td><strong>Ashford International - St Pancras International</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mainline</td>
<td>£22.20</td>
<td>£20.80</td>
<td>£40.60</td>
<td>£94.50</td>
</tr>
<tr>
<td>High Speed</td>
<td>£26.60</td>
<td></td>
<td>£48.70</td>
<td>£113.40</td>
</tr>
<tr>
<td>Supplement</td>
<td>£4.40</td>
<td></td>
<td>£8.10</td>
<td>£18.90</td>
</tr>
<tr>
<td>Percentage premium</td>
<td>20%</td>
<td></td>
<td>20%</td>
<td>20%</td>
</tr>
</tbody>
</table>


Any effects on household location choice will depend on both commuting times and fares. A one-hour reduction in commuting time was priced at around the level of the minimum wage, suggesting that the service was affordable for many users.

**Expected effects of reductions in commuting time**

Any population increase in affected areas would be expected to vary according to the demand for commuter transport by different groups. A resulting increase in the demand for housing would, depending on changes in the supply of housing, be expected to result in increased land prices.

Agglomeration benefits and better market access would be expected to result in increased productivity for local businesses, but for some sectors there might also be increased competition from London for both workers and consumers. Consumers might substitute their purchasing behaviour towards London.
Local labour supply might increase with an increase in population, but it might be harder for local firms to recruit if workers could more easily commute to London. Competition might lead the least productive businesses to exit, with productivity growth among survivors.

**Related literature**

In a study of underground and rail extensions in London, Gibbons and Machin (2005) found that a 1 kilometre reduction in distance to a station increased house prices by 1.5-2.1%.

Mayer and Trevien (2017) and Garcia-López et al. (2017) analysed the opening and extension of the RER in Paris. They concluded that connected municipalities saw increases in employment and firm location, with some evidence of positive effects on population with a shift towards higher skilled.

Turning to the literature specifically examining high-speed rail, Ahlfeldt and Fedderson (2018) examined the Frankfurt-Cologne connection and found an 8.5% increase in GDP in counties with intermediate stops. Heuermann and Schmieder (2019) also analysed the German high-speed rail network and found a positive effect on commuting out from larger to smaller cities.

Bernard et al. (2019) analysed high-speed rail in Japan and concluded that this contributed to better firm-to-firm customer-supplier matching and improved firm performance. Finally, Charnoz et al. (2018) examined the effects of the French high-speed rail network on the internal organisation of firms. They found evidence that it led to increased specialisation, with remote affiliates more intensive in production, with high-skill support moving to the HQ in Paris. Firms could better utilise regional advantages.

**Data**

A number of datasets were used in the study. For a 180-kilometre commuting zone around central London, travel time data from 2008-2011 were used to find the quickest AM peak (6am-9am) route to Bank Underground station in the City of London from a given postcode, using all potential modes of public transport: walking, bus, underground and rail.
Figure 2 shows the spatial distribution of changes in average commuting time, with green for reductions and red for increases. **Figure 2: changes in average commuting times**

Source: author’s calculations

Figure 3 shows the density of these changes.

For Kent (the solid line) the distribution is to the left, indicating reductions in commuting times, whereas for the remaining counties (the dashed line) the distribution is centred around zero.

The analysis of household responses was restricted to a 100-kilometre band from 80 to 180 kilometres around London. The data on housing transactions covered 2005 to 2015 and included sales price and characteristics for property type (detached, semi-detached, terraced, flat), whether new build, and freehold or leasehold. These were used to construct pre- and post-HS1 average sales price by postcode, which on average cover 15 addresses. Output area level 2001 and 2011 Census data were used to measure the primary mode of transport for commuting, population, skill levels and employment and occupation.
The analysis of business performance was conducted over a wider band 20-180 kilometres around London, with two data sources:

- The UK Business Structure Database (BSD) from 2005 to 2015 includes information on the population of plants, employment, entry and exit, location, industry, ownership type (private, public and not-for-profit sectors) and ownership structure.

- The UK Annual Business Survey/BRES from 2005 to 2014 is a stratified sample of establishments including information on sales, value-added, employment, average wage, location and industry.

Both datasets were used at the plant level, and also aggregated to the area level of postcode sector or postcode district.
**Findings on house prices, population and employment**

The analysis examined the relationship between each outcome of interest and commuting times to central London, controlling for area characteristics and geographic distance to the capital. It also examined whether responses to changes in travel times in Kent differed from the rest of a wider commuter zone covering the remaining counties around London.

The findings suggest that a 10-minute reduction in travel time in Kent was associated with around 1.5-3.0% higher house prices. This was comparable to the 2005 study by Gibbons and Machin, which concluded that a 1-kilometre reduction in the distance to a London underground station (saving a 10- to 15-minute walk) increased house prices by 1.5%-2.1%.

Analysis of commuting flows data suggested that, as commuting time fell, there were increases in rail commuting both within Kent and from Kent to London (but not vice versa). Car commuting also increased, potentially due to a second household member using the car as their primary mode of commuting.

Reductions in commuting times were found to be associated with increases in the working age population. In terms of household demographics, the results suggest that reductions in commuting times were associated with reductions in the share of retired households, increases in the share of households with school leaving qualifications as their highest qualification (A-level equivalent) and decreases in the share of households reporting no qualifications. This may suggest that increases in property prices resulted in some people being priced out, with gains to existing property owners. There was no significant change in unemployment. There were changes in the employment composition of residents as commuting times fell in Kent:

- falls in the reported shares of individuals working in construction, transport and communications and public administration; and
- rises in the shares in manufacturing, wholesale and retail, business services and hotels and restaurants.

Similarly, there were falls in the share of elementary occupations and rises in the share of managers, directors and senior officials, and staff in sales and customer service.
Findings on business performance

Analysis at both the aggregate level and the plant level showed that lower commuting times were associated with higher employment and lower plant entry. Analysis by industry and sector provided some additional insights. The wholesale and retail and business services sectors saw lower entry and higher exit. For some sectors this was also observed within multi-plant firms.

These results suggest that reductions in commuting time might be leading to increased competition and sorting. Reductions in commuting time may have led to a reduction in local demand in some industries. It is possible that decreased travel time to London, and subsequent increases in commercial rents and/or competition, resulted in the exit of less productive plants.

The analysis shows that lower commuting times are associated with higher value-added, labour productivity and wages. By industry, there is some evidence of performance improvements in wholesale and retail and business services, again quite possibly driven by sorting.

Conclusions

There is some evidence of a spatial reallocation of households. People may be relocating within Kent, or within the wider London commuter belt, in response to lower commuting times.

The findings suggest potential distributional impacts of (major) transport projects driven by compositional changes with, for example, benefits accruing to landowners, and lower income families potentially being priced out.

There is evidence that, depending on geographic distance, shorter travel times to London areas are associated with stronger business performance. This may be driven by sorting in addition to any agglomeration benefits, with only the most productive firms remaining in those locations that see the reductions in travel times.

Report by Peter Gordon
Introduction

Ivan explained that his presentation was based on a study carried out for the Irish Government Department of Transport, Tourism and Sport to review future capacity needs at Ireland’s state airports. The published report is available at [www.dttas.ie](http://www.dttas.ie). Volume 1 of the study report covers demand forecasts and capacity assessments for Dublin, Shannon and Cork airports.

This work was carried out by Oxford Economics, as prime contractor, with assistance on capacity assessment by Taylor Airey. CEPA was responsible for Volume 2 of the study report, covering Dublin Airport only, and examining:

- the timeframe, sizing and location of additional terminal capacity on the basis of the Volume 1 forecasts, and
- potential financial and regulatory frameworks.

In the presentation Ivan concentrated on the financial and regulatory section of that volume.

Unbundling

Many utilities have increased competition and improved cost and service through unbundling of activities previously carried out in-house. Part of the motivation for the study was to examine whether a similar approach could be applied at Dublin Airport.

Success factors

Some unbundled arrangements in utilities or transport have been a success, but others less so. Unbundling is successful only when it offers meaningful additional choice to someone. In energy, unbundling can separate generation, transmission, distribution,
system operation, and supply. Generally end-use customers only have a choice of supplier, but suppliers have choices over the other aspects of the supply chain. In telecommunications unbundling has facilitated a proliferation of offers and service improvements.

Unbundling is less successful when increased interface costs exceed the competition benefits. In domestic water services, retail is less than 10% of total cost and so competing retailers cannot offer customers meaningful distinctions in the service. For train operation and rolling stock provision in railway services, unbundling has enabled meaningful cost savings in operations through competition for the market, providing choice to the funding party, with some potential for on-rail competition, offering choice to the customer. Unbundling of rail infrastructure maintenance activities has now been reversed. Difficulties arose over the ownership of asset condition data and clarity over responsibility for safety. The many complex interfaces present on rail have produced controversy over whether the gains justify the extra transaction costs.

Suitability of the business

There needs to be a reason why the unbundled business overcomes the cost of establishing it. Reasons can be:

- operating only, to deliver efficiency, such as by standard contracting out of facilities management;
- capital and operating, as in Finance/Build/Operate/Maintain (FBOM) deals; and
- commercial, to create competition and to offer users choice, whether capital or operating, such as in retail services at airports.

FBOM arrangements tend to require sufficient scale and an ongoing interest. PFI deals for schools and hospitals were mainly expensive finance, because there was insufficient long-term interest from the financing party in the operation of the unit. To justify a bespoke financing activity a capital scale at least £250-500 million is generally recognised as being required, although other work by CEPA on electricity transmission suggests

- 17 -
that much smaller scale bespoke deals are possible in some circumstances.

**Unbundling the airport**

Some unbundling already exists at some airports, although this approach is far from universal. Examples of unbundled services include ground handling, retail activities, aircraft fuelling, passenger lounge services and air traffic control. Potentially, three economic actors are involved in the choice of services: the airport itself; the airlines; and the passengers.

The passengers’ choice for many airport services – which terminal or lounge to use – is often necessarily mediated by their airline while services such as retail tend to be already unbundled. The choices for airlines are, however, often themselves restricted, such as being told which terminal to use. A large part of the activities, whether unbundled or not, are typically under the control of the airport. Most unbundled terminal finance and operation schemes give choice to the airport operator, not to the airline.

At a large enough airport, FBOM can in principle cover activities such as:

- Air Traffic Control. This is fairly common; the client appears to be the airline, but the service is mediated by airport.
- Baggage handling. Again, the client appears to be the airline, but the service is mediated by the airport.
- Runway and other airfield surfaces and services. This is not common, but could be considered.
- A whole terminal. A number of potential institutional arrangements exist, as discussed below.

A major development would be to unbundle a terminal in a way that gave airlines meaningful choice.

**Case studies of airport unbundling**

**Airline co-finance**

At Munich, Terminal 2 (T2) is financed and operated by a 60/40 joint venture between the airport and airline Lufthansa. The
airport was having difficulty financing a new terminal and the airline partnership was critical. T2 operates as a STAR Alliance aligned terminal; members of the alliance have a choice whether to use it, non-members cannot. A challenge from Ryanair to the arrangement was dismissed by the European Court.

At Birmingham, the Terminal 2 Eurohub, which opened in 1991, was co-financed with external partners, including British Airways. BA initially took an exclusive lease, but later reduced its interest after cancelling its regional hub plan. As in Munich, the airline partnership was critical to the success of the financing deal. Through the co-financing, BA was able to exercise choice and later, as BA reduced its interest, other airlines were able to exercise similar choice. In 2010 the airport took over and refinanced the terminal as part of plans to remodel the site.

**Airport as customer**

At Prague Václav Havel, Terminal 2 was built as a private finance deal. To the user the airport operates as a seamless whole. T2 was initially designated for traffic to/from Schengen countries and therefore provided no user choice. This designation later changed (the original deal may have been extinguished, but it has provided difficult to ascertain the full details). While this is a common method of financing airport development, no user choice is generated.

At Budapest Ferenc Liszt, two terminals were operated under PFI arrangements from 1997 until 2001, when the state expropriated them to make a “whole airport” solution. Airlines are allocated to terminals according to nationality, so the arrangement appears to offer no user choice. It is possible that the “part airport” arrangement unduly restricted a “whole airport” solution.

**Entrepreneurial examples**

At New York JFK, Terminal 4 is operated by the Schiphol Group on a commercial basis and is a non-aligned “common user” terminal. Major airport users and alliances have, at various times, had the option to take over or build a terminal. The remainder of the six (originally ten) JFK terminals are currently each operated by a specific airline or alliance. Non-aligned users can negotiate access to any terminal, but the main tenants of
aligned terminals generally prioritise their own operations over secondary users. At T4 all users are treated equally. In theory aligned users have choice, but there are only limited opportunities to exercise it, and non-aligned users may have little real choice. Similarly, mid-size US airports have one aligned terminal and a second non-aligned common user one, offering choice only to the main airport user.

At Toronto Pearson, T1 was a STAR-Alliance aligned terminal; T2 was hurriedly created out of an existing building, was cramped, seen as inferior and was operated by the airport. Terminal 3, opened in 1991 as a privately owned and operated terminal, and often described as the first fully independently-built and operated terminal, was a common user terminal with Canadian Airlines as its anchor tenant. Aligned users enjoyed real choice, but it is unclear how much choice between T2 and T3 other users had in practice. The experiment was terminated early: as far as the study could ascertain, the reason was more political than any indication that the terminal was in financial difficulty or causing competition detriments.

At Lagos Murtala Mohamed, Domestic Terminal 2 was privately built, owned and operated. The Private Public Partnership (PPP) concession to build the terminal was won by Bi-Courtney, a Nigerian infrastructure company, and T2 is considered the finest terminal in Africa. To lower financial risk and to make the PPP viable, Bi-Courtney was granted exclusive rights to domestic operations for T2, but these rights are not entirely observed. The airport operator has retained control of retail concession in T2, so the terminal operator receives none of the concession profits, and Bi-Courtney has not made a satisfactory return. This and other legal harassment and contractual non-compliance by the authorities have made other PPPs in Nigeria hard to let.

Lessons from the case studies

Commercial risk is a major issue in institutional design; financiers often require some assurance about future demand. Comments from the study on the structures observed from independently operated terminals are set out below.

Airline- or alliance-run and operated terminals may admit other users on commercial terms. This is common in the USA.
The airline/alliance can operate the terminal to its own taste, but it requires sufficient scale to be attractive to the airline/alliance and for a separate common user terminal to operate alongside.

**Finance and operate terminals, with no commercial exposure**, enable to airport to appear as a seamless whole to the user. This is a common method of introducing private finance into an airport without change to the standard operating model.

**Finance and operate terminals, with commercial exposure**, can offer exclusivity to a certain class of airlines, such as domestic operations. This is commonly seen as an arrangement for an airport as a whole. Taking a commercial risk at a single terminal is higher risk, and exclusivity is often required to make the opportunity sufficiently feasible.

**Finance and operate terminals, and commercial exposure by joint venture between operator and an airline/alliance**, may admit other users on commercial terms, and are a halfway house between an airline/alliance terminal and a commercial terminal. The joint venture assures the operator that the anchor tenant is not leaving, reducing the level of risk. Sometimes, as at Munich and Birmingham, the airport itself is the commercial element or a part of the consortium. This arrangement typically arises when the airport finds the project too risky to finance on its own, and the airline involvement reduces that risk.

**Finance and operate terminals, and commercial exposure for a common user terminal** can be used in an otherwise aligned airport. While there is no formal exclusivity, in practice the common user terminal can expect to serve most or all the non-aligned airlines. This is the arrangement at T4 at JFK and similar to what happened at Toronto for a while. Nevertheless, such terminal operators are usually pleased to have a substantial anchor tenant.

**An entrepreneurial terminal at Dublin airport?**

Dublin airport is committed to a new parallel northern runway to increase capacity, but a significant long-term issue is traffic congestion on the roads leading to the airport. Figure 1 shows the current airport and a photomontage of the designated second runway location. An entrepreneur owning 57 hectares of suitable
land in the red ellipse has applied to Dublin County Council for planning permission to build a new independent terminal, adjacent to the perimeter fence and South West apron.

*Figure 1: Dublin airport, second runway and terminal site*

The site could accommodate a 12 million passengers per annum (MPPA) terminal and stands, with an access road to the west connecting to a different part of the local road system and avoiding exacerbation of the traffic congestion. The airport also owns some patches of land in the area.

The proposal challenges the conventional wisdom that it is too risky to build a terminal without some exclusivity, but the proposers could be expected to make deals with airlines before building began. They claim a right of access to the airfield under EU law, and state that they would build a terminal suitable for premium airlines, seeing this as being more profitable.

**Regulatory issues**

Equity of airfield access raises regulatory issues similar to other unbundled utilities. An entrepreneurial terminal would require unbundled charges for airfield access and might require formal accounting separation, or more, to prove fair cost allocation.

While Air Traffic Control over airfield movements and runway access is generally already independent, there are complex
interfaces and allocation issues over other shared services which it might be inefficient to duplicate. However, similar issues apply in every regulated industry.

There are also issues over potentially stranded assets and/or labour. A large increment in capacity might attract substantial business from existing terminals, skimming the best business, and leaving the operators of existing terminals with excessive manpower and thus unable to cover costs on the basis of present charges. However, these issues are not materially different from those experienced by commercial airport operators in general, such as during recessions.

As an airport fills up, a competing terminal operator without any obligation to expand capacity might gain some market power, or might start expanding capacity, deterring others from doing so, and then take advantage of the situation. However, overall this seems a more pro-competitive and benign situation than a monopoly provider, given that there is a competition authority to act as a backstop.

There are important issues related to making effective use of a constrained site. An independent terminal might result in inefficient use of land, or exert some control over future development. Any development permissions would need to be structured to promote the future efficient development of the site. In the case of Dublin Airport, for example, locating any new terminal further west might offer a more efficient operation and allow extra flexibility for future development.

Independently-owned and operated terminals do have the risk of bankruptcy but, in view of the large sunk costs, most useful terminals should be capable of being re-financed. Even so, a terminal could fail to make even a primary return and, in such cases, given the strategic value of the site, it might be advisable to have powers to designate an operator of last resort to take over the terminal and to ensure the continued orderly and efficient development of the airport.

Questions arising

Would an entrepreneurial terminal preserve airline choice, or could the terminal become exclusive to certain airlines, as at JFK?
Does a regulatory obligation to serve apply only to the existing airport, or would the entrepreneurial terminal share some of this obligation?

**Potential institutional structures**

Five entrepreneurial structures for new or existing terminals were identified. A significant question is how much strategic control of the airport should be retained by a central authority.

**New terminals**

First, a new terminal could be designed and built by an entrepreneur, while the existing airport continued in common ownership. Design and build would allow the new entrepreneur to customise the terminal to its business model and maximise the efficiency gains. However, there could be concern about equity of access to airfield services and pricing between the independent terminal and airport-owned terminals.

Second, the airport could design and build a terminal and then offer it to a commercial operator to take over on full commercial terms. This approach was considered and rejected for T2 at Dublin, mainly because of the urgency at the time to provide additional terminal capacity. While this approach does lose the gains set out in the first option, it does maintain a strategic planning structure and offer cheap regulated finance.

Third, a strategic airport manager could describe to a third party the opportunity to build a terminal, defining the broad aspects of geography and some business restrictions. The aim would be to preserve the long-term strategic interest of the airport and set out clear obligations. In practice, it might also serve to limit the risk to some degree, given the restrictions on others. This approach attempts to offer a middle way between the first two options and get the best of both worlds. Is this approach feasible, or might it collapse under its own contradictions?

**Existing terminals**

Fourth, existing terminals could be offered to entrepreneurs or airlines to take over. What would be the nature of the contract?
and selection process? Other issues are the financial feasibility of the terminals, risk and potential capital write-offs.

Fifth, an airport operator could merely act as an unbiased system operator, and provider of common services. However, if all terminals became aligned with specific airlines/alliances, where would the obligation to accommodate newcomers lie? Also, what would be the role of the strategic airport manager in directing airport development and the process for expanding the airport?

**Conclusions**

The willingness of an entrepreneur to build a terminal at Dublin seems to be proof that entrepreneurial terminals are possible, but they may only be valuable in a restricted set of situations. Regulatory arrangements similar to other unbundled utilities would be required. These might be messy, but need not be “showstoppers”. There is the usual fringe of difficult issues and/or imperfections requiring trade-offs, but at least the situation is a step forward from pure monopoly, thus representing a “nice problem to have”. Safeguarding the long-term strategic development of the airport, as at Budapest, is probably most important.

Competition between airports is simpler: it is relevant that Dublin is a one-airport market. Various stakeholders oppose the Dublin proposal for unsurprising reasons.

- Should we worry about the “obligation to serve”?
- Does this obligation fall on airport or terminal operator(s)?

Which airport might take the risk to be first and see if the proposition is worth it? One needs a “big enough” airport to make it work, but “big enough” airports are often important enough for policy makers to be reluctant to take a risk.

**Discussion**

David Parish (independent consultant) wondered about the views of financial backers to the proposals at Dublin. Could the scheme get to financial close? Ivan (in a post-meeting note) considered that it was likely that it would be necessary to come to a formal agreement between the government and the promoter, so that it became a defined scheme with sufficient
certainty for both promoter and government as to what was being done, and without repeated requests for further assistance that might happen otherwise.

**David Starkie** (Case Associates) noted that there were questions about the ability of Heathrow Airport to finance its third Runway. He wondered whether bringing in an outside party to finance additional terminal capacity might help Heathrow raise the funding.

**Peter White** (University of Westminster) asked what would be the sources of income for an independent terminal operator. Would these include a share of charges paid by airlines in addition to those from retail activities at the terminal? **Ivan’s** expectation was that the airline would pay all charges to the terminal operator, which would then pass on the designated amounts to the airport operator for common services. **David Starkie** saw this as one of the most problematic areas. Historically airports had had to publish a schedule of charges for specific activities, but the more recent trend had been towards bundled charges. **Ivan** explained that almost all airlines paid less than the scheduled charges at most airports. He would never claim that unbundling charges would be easy.

**Dick Dunmore** (Steer) noted that currently airfields tended to be licensed as an entity. Would independent terminals need separate licences? **Ivan** considered that the terminal would be classed as an airfield and hence would need a separate licence.

**David Starkie** wanted to know why the European Court had thrown out the case brought by Ryanair against Munich Airport. **Ivan** did not know enough about the details to comment.

**Chris Castles** asked about the relationship between the proposal and the forecasts for the market as a whole at Dublin Airport. **Ivan** thought the proposers might be looking to do deals with expanding long-haul carriers such as Gulf-based airlines.

**Dick Dunmore** wondered whether users were better served by having a number of small terminals at airports in order to foster competition.

**David Starkie** also wondered whether the customer offers in Premium Lounges might be expanded to include additional services, such as dedicated check-in and baggage drop, thereby
enhancing competition. He also asked about the timeline for the study. Did this overlap with the decisions taken about Terminal 2 at Dublin? **Ivan** explained that the study was undertaken during the first half of 2018. The airport had already started building T2, but had previously given thought to allowing a private operator to build the terminal. The urgency to provide additional capacity had ruled out that approach.

Finally, **Ivan** noted that any independently-provided terminal at Dublin Airport would need some arrangement for linking with the existing terminals for interlining passengers. The operational and financial aspects of this issue had not featured prominently so far as part of the proposals.

Report by Gregory Marchant
The Motorway Age: How post-war governments responded to rapid traffic growth, by David Starkie, revised version, Salisbury, Riverside Publishing Solutions, 2019

The first official plan for a national motorway network was published in 1946. A network of some 800 miles was envisaged, to be completed over ten years. The change from Labour to Conservative government in 1951 brought about a change of emphasis from public to private spending. Thus, while spending on major road projects was cut by 80%, purchase tax on cars was reduced. Congestion and complaints about the inadequacy of the road network inevitably arose, and by the mid-1950s investment in motorways was back in favour, the first opening in the latter part of the decade. The 1946 programme, however, was not substantially complete until 1986.

The principal emphasis in this book is on urban issues, with coverage extending beyond motorways. Chapters 2 onwards examine urban network design (rings and spokes), personal influences such as by Marples, Buchanan and Smeed, road pricing, lorry routes and the environmental backlash against intrusive schemes. Ernest Marples, Minister of Transport from 1959-64, is credited with introducing the concept of traffic management, including keeping traffic moving via networks of one-way streets. Marples also brought in Colin Buchanan, author of the 1963 Traffic in Towns report, which introduced the concept of primary, distributor and local roads, although the famous report’s possible successor, Transport in Towns\(^1\), was regrettably never commissioned.

The issue of road pricing is summarised well in Chapter 5. The debate is shown to have originated with transport economists such as Gabriel Roth, Christopher Foster and Alan Walters, the

\(^1\) Referred to by Buchanan in answer to a question following his address to the 1988 PTRC Conference, commemorating the 25th anniversary of Traffic in Towns
outcome being the appointment of Reuben Smeed to head the committee on road pricing that reported in 1964. Over fifty years later, the concept remains largely unimplemented, but still central to transport policy debates. Meanwhile, Starkie outlines the implementation of alternative approaches, such as the first urban motorway rings and managing parking (parking meters, off-street car parks), although park-and-ride seems not to have featured in the thinking at this time. While traffic management and road capacity expansion allowed city traffic speeds to increase, this improvement was influenced by significant reductions in the size of the workforce in conurbation centres, notably by over a third in Merseyside.

Chapter 8 reviews various urban motorway schemes and identifies how their intrusive nature lead to a backlash against them, notably from London-based newspapers and emphasising most strongly the impact of the roof-level London Westway. A decade later, Starkie suggests that traffic regulation by “acceptable” levels of congestion was replacing concepts such as road building and fiscal/pricing measures. The alternative of traffic reduction also began to be considered.

Chapters 11 and 12 are a welcome digression into freight issues, considering the weights of, and routes taken by, lorries. The concept of a national network of lorry routes is shown to have been too radical for either politicians or the haulage industry. In Starkie’s view the lack, in the face of anti-road pressure, of sufficient investment to take place in urban highway capacity, and of thorough analysis of the costs and benefits, resulted in the proposed 3,000 mile English national lorry route network being abandoned.

Development of the interurban network of long-distance motorways receives less detailed coverage than that of controversies surrounding urban schemes. In Chapter 13, Last Motorways, however, there is a brief “catching-up”, with reference to delays in implementing the M1 and M4. As a consequence of environmental objections (notably to the semi-urban M42 around Birmingham and to the M25 London orbital) and financial considerations (reduced public expenditure generally during the 1970s), the last of the 1946 proposals were only implemented in the 1980s.
The rationale for building a motorway network is shown to have been poorly thought out, according to Starkie (p.146) and “obscure”, as evidenced by the sub-headings “Decisions pre-date evidence gathering” and “Incompatible Objectives” (pp.146/8) in Chapter 14’s coverage of “Politics versus Economics”, with politics shown to dominate decision-making. There was a (failed) attempt to devise a policy for road freight transport but, in quoting former Cabinet Office adviser William Plowden, Starkie shows how governments had over a long period failed to arrive at a comprehensive view towards the car (p.151). The influence of civil servants and lobbyists is discussed alongside that of party politicians, who failed to come up with distinctive policies. The often-cited fact that transport policies take a long time to implement may have prevented politicians from making frequent and rapid policy reversals, which might have resulted in nothing ever happening - those who call for a reappraisal of HS2 please note. Starkie’s observation that what transport policy changes did occur often arose towards the end of an administration’s term of office (p.153) is interesting; this may provide some explanation of why changes of policy were sometimes quite minor. Nevertheless, the author concludes, road traffic policy was “(just) robust enough” for the completion of the 1946 plan over the succeeding four decades.

For an updated 2019 edition of an original 1982 work, it is regrettable that developments since 1986 are not considered, and there is no more comprehensive investigation into how the long distance motorway network came about. Updated tables, to cover changes in road speeds and the commuting modal split since 1971, would have been useful, as would tabulation of the growth of the motorway network from its inception to the present and of total road traffic since 1986 (Appendix B). The summary of transport ministerial post-holders between 1945 and 1986 (Appendix A) is valuable, but perhaps more could have been said in the text to bring out policy differences between them. A book on the role of the transport ministry in its various guises since its inception a hundred years ago and the multitude of incumbents would be a valuable addition to the literature: perhaps a topic for PhD or post-doctoral research projects?

In conclusion, *The Motorway Age* is an expertly researched and clearly written account of the first years of the motorway age,
but disappoints in not continuing the story over the succeeding decades, most notably to cover the era of road traffic reduction targets, major road scheme cancellations and the subsequent reversal of such policies in the present century.

Arguably we still live in the motorway age (the network has expanded by some 500 miles, or 25%, since 1986), but the story of the evolution of motorway policies, planning, construction, operation and use since the 1980s has still to be written.
# TEG Committee 2019-2020

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The Transport Economists’ Group, formed in 1973, provides a forum for people involved in transport economics to meet regularly and discuss matters of mutual interest. Membership is open to economists working in transport and others whose work is connected with transport economics.

The aim of the Group is to improve the quality of transport management, planning and decision-making by promoting lectures, discussions and publications related to the economics of transport and of the environment within which the industry functions.

Meetings, held at Arup’s Central London HQ at 13 Fitzroy Street from September to June (except December), consist of short papers presented by speakers, drawn from both within the Group’s membership and elsewhere, followed by discussion.

The Group’s Journal, “The Transport Economist“, is published three times a year reporting on meetings and other activities of the Group. It reviews recent publications of interest and contains papers or short articles from members. The Editor welcomes contributions for inclusion in the journal, and can be contacted at petersgordon@blueyonder.co.uk.

The current membership of over 150 covers a wide range of transport modes and types of organisation. Members are drawn from transport operators, consultants, universities, local and central government and manufacturing industry. All members are provided with a full membership list, updated annually, which serves as a useful source of contacts within the profession. Applications from people in all sectors are welcome.

Applications for membership should be made on a form which can be downloaded from the Group’s website at www.transecongroup.org.
Contents

Reports of meetings

Evaluation of the 26-30 Railcard Pilot  
John Segal and Jenny Taylor  
1-7

The economic impacts of HS1 in Kent  
Helen Simpson  
8-15

Alternative institutional structures for airports  
Ivan Viehoff  
16-27

Review: The Motorway Age: How post-war governments responded to rapid traffic growth, by David Starkie  
28-31

TEG Committee 2019-2020

Details of meetings are provided on our website at  
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