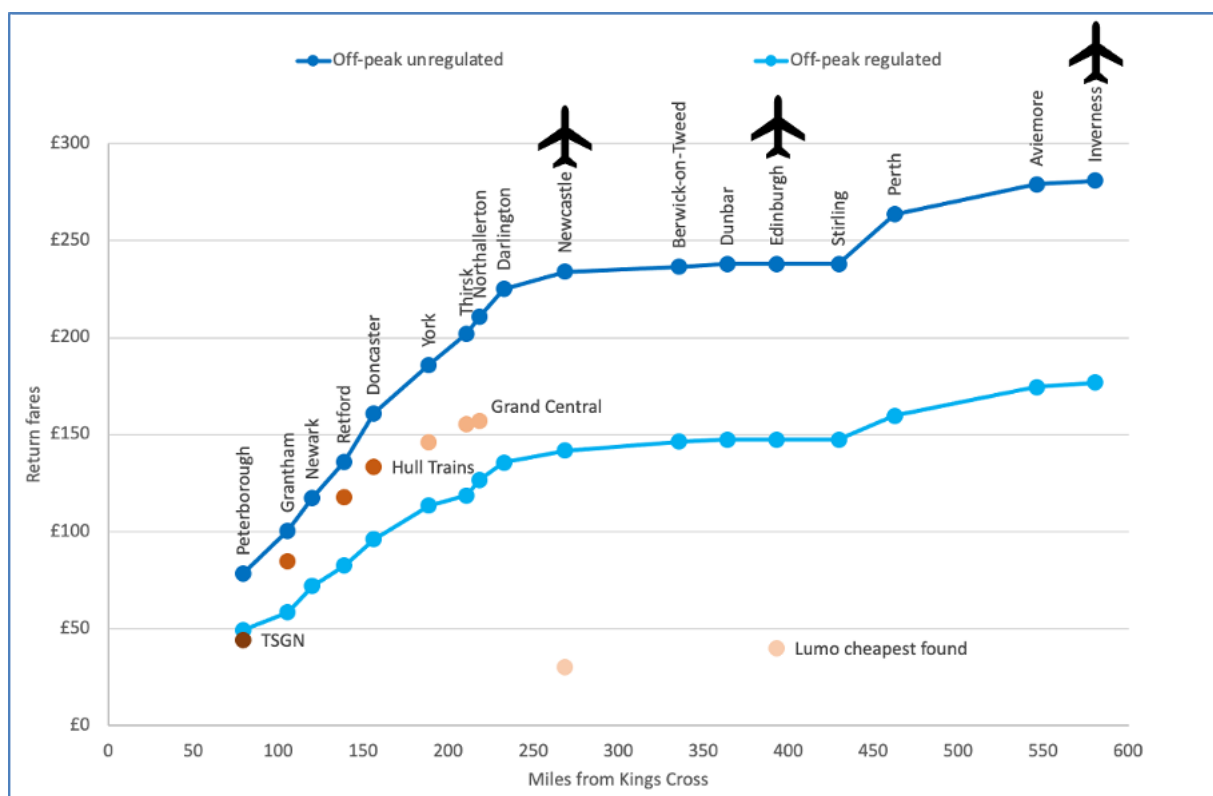


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Contents		Pages
Reports of meetings		
Why Travel?	<i>Matthew Dillon & Alexander Jan</i>	1-10
Rail industry structure: next steps "Have we finally arrived?"	<i>Richard Davies</i>	11-31
Rail industry contracting, competition and capacity: next steps	<i>Dick Dunmore</i>	32-51
TEG Committee 2022-2023		52

Details of meetings are provided on our website at
<http://www.transecongroup.org/meetings/>



Why Travel?

Matthew Dillon of Arup and Alexander Jan, Chief Economic Adviser to the London Property Alliance

Hosted by Arup on Teams

26 January 2022

Introduction

Alexander Jan explained that Matthew Dillon was unwell and that he would be presenting the paper alone. He introduced himself as Arup's former chief economist and as a business improvement district chair.

"Why Travel? Understanding our need to move and how it shapes our lives", edited by Matthew Niblett and Kris Beuret, was published in 2021 by the Independent Transport Commission. The book collated earlier research, based on datasets which often predated the COVID-19 pandemic, and used this to explore motivations and decisions:

- What are the motivations that underpin journeys?
- How can we make decisions that improve our travel experiences?

The speakers' chapter attempted to deal with the economics of travel.

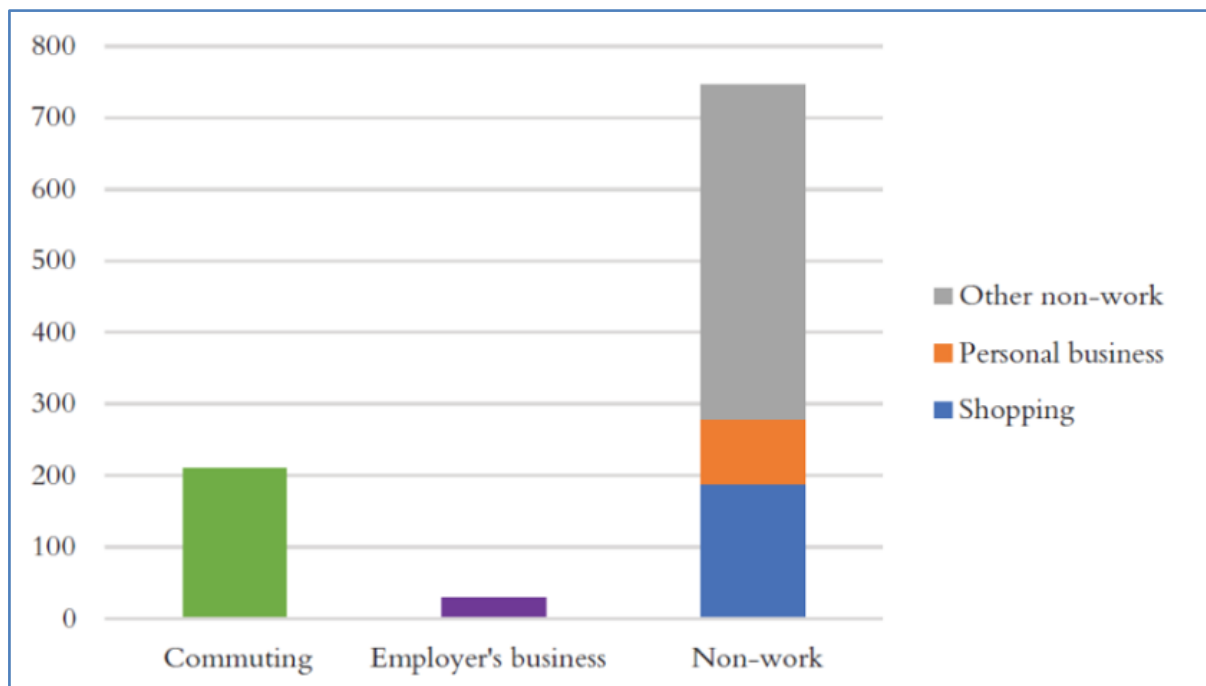
It's not the destination, it's the journey

We are often told that transport is a derived demand, always caused by some other purpose. Dogs may run around for "fun", but surely a rational human being would only travel in order to do something else. In practice, the desire to move is a purpose in itself, shaped by a range of social, physical, psychological and cultural factors. What else do we gain from it, and how are the motivations for travel governed by rewards, rational factors, and "human elements"?

How would economists be seen by the rest of the world? Historically, economic theory has seen transport as solely or primarily as a derived demand resulting from access to goods or

services. This makes travel highly dependent on the benefits accruing at the destination, whether work, business or leisure.

Figure 1: Journey purposes in England, 2018



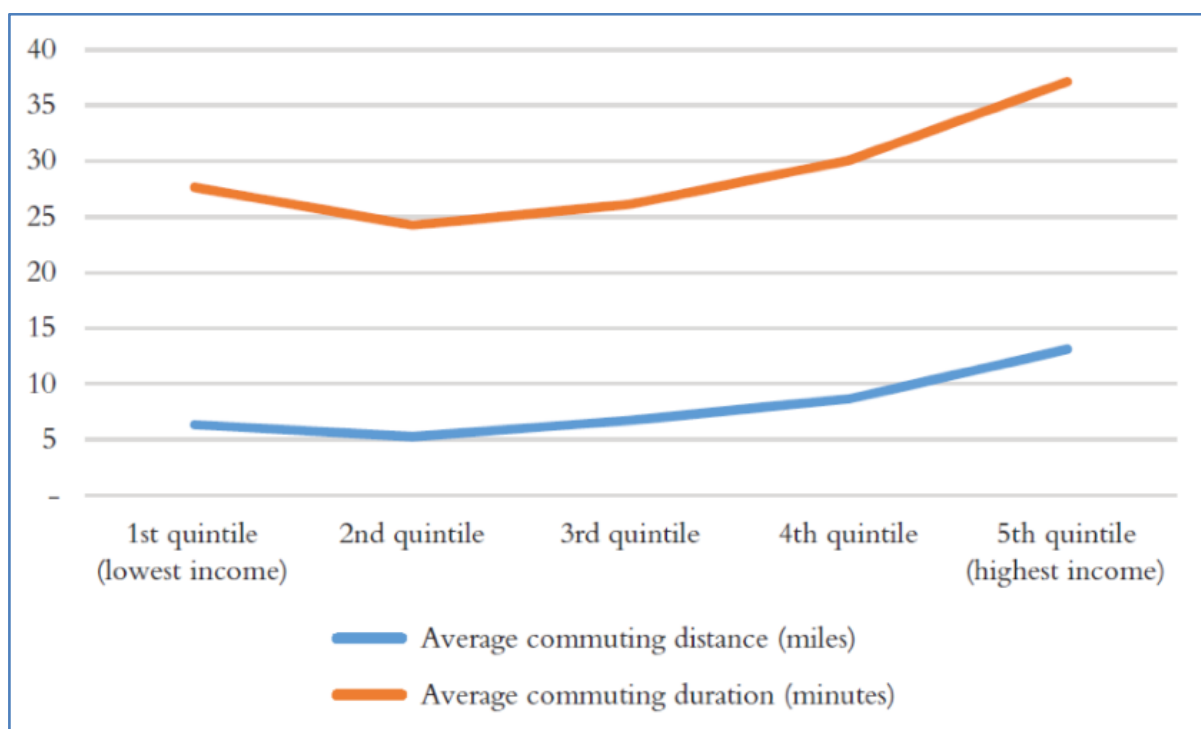
Source: National Travel Survey Table 0403.

From this follow concepts such as market segmentation as commuting, business travel, non-work related and so on. On this logic, the desire to consume more or better quality or work, business and leisure opportunities leads to greater transport demand.

Figure 2 overleaf uses 2017/8 data to show how those with higher income tend to commute both longer and further.

However, one possibility is that this trend has been changed or reversed by the COVID-19 pandemic, with those on higher incomes often able, and now permitted, to work from home. If so, there may be a complete change in commuting patterns with the benefits, such as savings in rail fares, accruing mainly to the relatively wealthy.

Figure 2: Commuting distance and time by income, England 2017/8



Source: National Travel Survey 2017/8.

Inspiring destinations

Travel as a derived demand also applies to leisure journeys, such as to Disneyland, Las Vegas and, presumably, the Hanging Gardens of Babylon. This suggests a deep-rooted desire for movement which predates civilisation. People will sit on a plane for nine hours, taking them not only physically but also mentally away from their everyday lives. Even for work, we have the dreaded “awaydays”, in the belief that a change of environment will contribute to productivity, innovation, loyalty or staff retention. The desire for difference applies not only to work environments but to museums, shops and theatres, including those in New York rather than round the corner.

If all the value is at the end of the journey, logic suggests that people would prefer to avoid it or to travel for a shorter period. Faster journeys are often valued more, leading to the value of time savings typically being the largest component of the benefits associated with public sector investment cases.

However, if travel itself has a value, then how can reducing the time spent doing it also be of value? Even after the pandemic, it appears that people still wish to move around, even when it appears unnecessary.

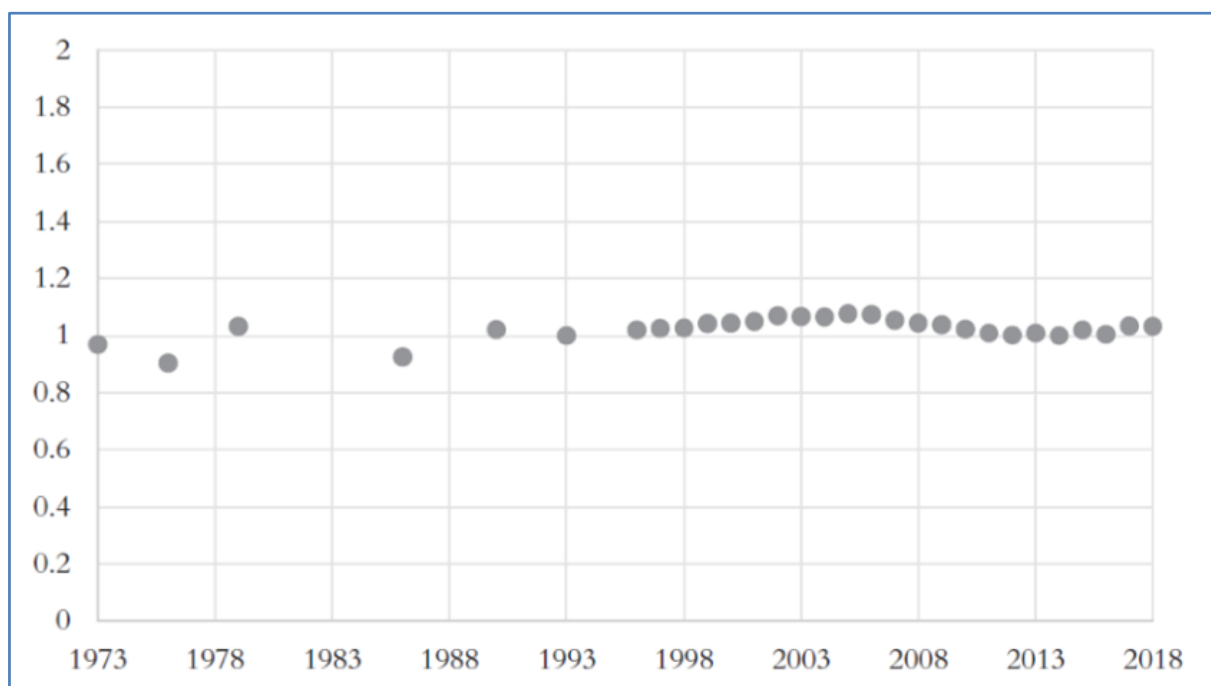
Travel time budgets

A second feature which is not readily explained is the evidence for travel time budgets:

- Marchetti's constraint, an hour a day since the beginning of history (Marchetti, 1994).
- Travel time is the same, but distance is ever increasing (Zahavi, 1979).

This has had a profound impact on the size, shape and number of our settlements, which have become larger, and hence fewer and further apart, from walkable diameters and spacings until the Middle Ages to modern cities many miles across and apart. However, there is an important effect of diminishing returns in terms of how far people will travel or the time they will spend travelling. Travel must compete with other demands, some of which are non-negotiable, such as domestic duties like putting the children to bed.

Figure 3: Travel time per day, England 1973 to 2018



Source: National Travel Survey Table 0101.

Travel time appears broadly static, but fell during 2020, when average reported trips per year fell 22% from 953 to 739.

David Metz noted in 2008 that the largest category of benefit from transport investment was giving employers better access to workers, or where access is to a higher value, scarce or unique destination. Having access to more branches of Aldi is not the same as being able to reach Harrods. Projects that open up new employment or leisure activities within “an hour a day” are likely to be worth more than those that don’t.

However, travel is much more than a derived demand:

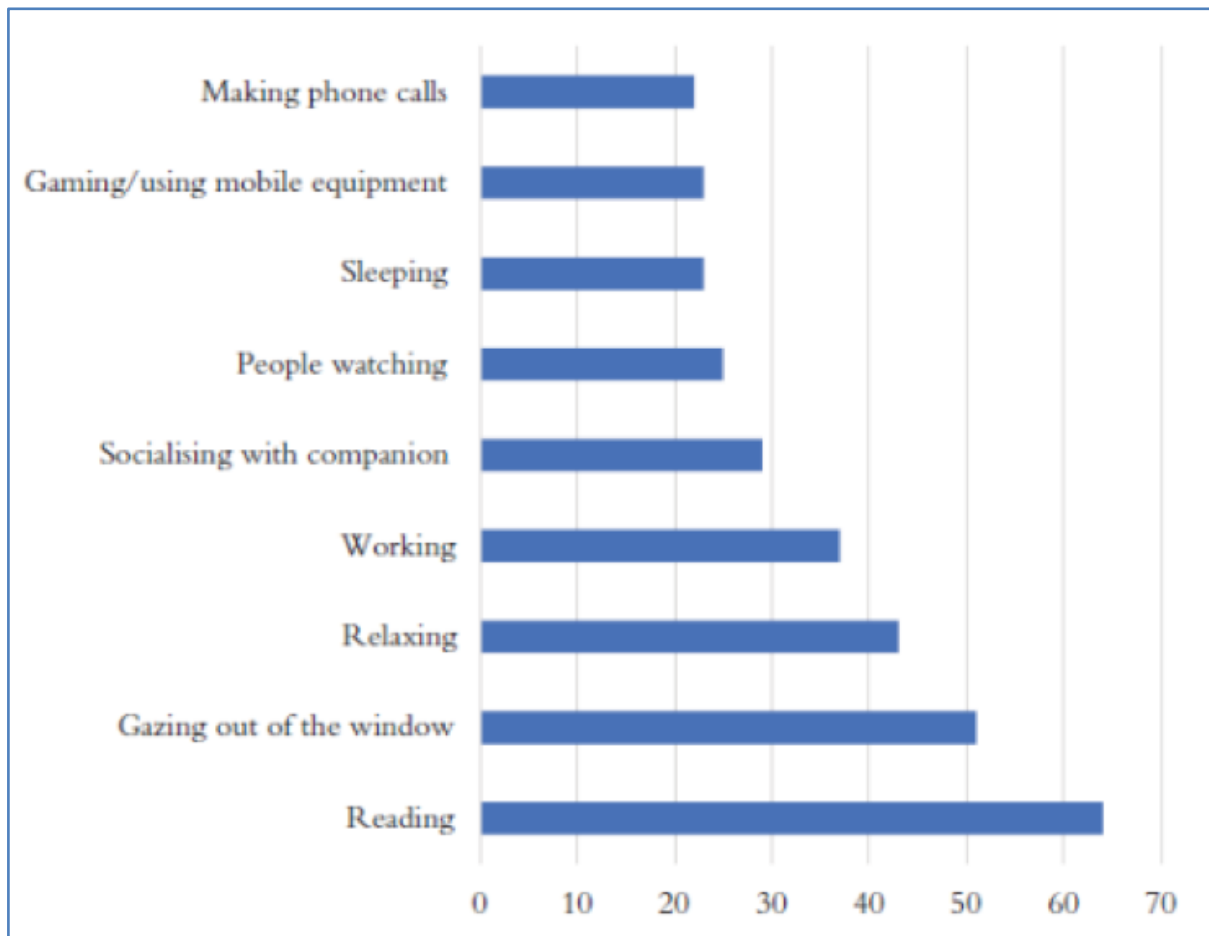
- Walking, running and cycling all have health and other benefits and are undertaken for leisure with no particular (or indeed any) destination in mind. They have even been exempted from some COVID-19 restrictions.
- Driving round in an expensive car may please some, through the self-image associated with conspicuous consumption.

Economists struggle to place a value on active travel modes: as David Metz noted in 2008, how much is a jog or a cycle ride worth?

There are also phenomena such as heritage railways, pleasure flights, boating and skiing. Consider:

- Thrills, the sensation of speed, and being in control, or out of control: *On The Road Again*, *Born To Be Wild*, *Come Fly With Me*.
- Contemplation, meditation and splendid isolation at 30,000 feet. (Vanhoenaker, 2015)
- Aircraft in particular offer an imagined, privileged world, cocooned place and special mental state. (de Botton, 2003)
- Can we distinguish between the intrinsic utility of travel and the additional benefits? (Hupkes, 1982; Salomon, 1998; Mokhtarian, 2001)

Figure 4: Customer activities during rail journeys



Source: Arup/Future Thinking for HS2 Ltd (2016)

Valuing the travel experience

For appraisal purposes, this raises a number of issues:

- Should there be exploration of the value based on the benefits gained from travelling?
- Some modes have lower pleasure (consumption) value. (Lumsdon and Page, 2004)

This is important for service providers attempting to introduce price discrimination but, despite all of this, Marchetti's constant appears to hold.

The economic downsides

However, travel generates many negative externalities including noise, pollution, accidents, severance and climate change (Maibach et al., 2008, Newbery, 1990; Parry et al., 2007, Small

and Verhoef, 2007). There are longstanding challenges in how to use pricing to reflect such negative impacts. Historically, there has been a focus on “the mobile” being at an advantage but, post-COVID, there may be a major distributional issue of those who have to travel for work and those who choose not to do so.

Behavioural economics: why we really travel

Some aspects of the underlying reasons for travel are well understood and intuitive:

- There are cultural and social expectations and peer pressure, such as to be seen to have a summer holiday. Do we travel at least partially because people expect us to?
- Conspicuous consumption theory may also be helpful. (Bronne and de Hoog, 2018)
- Are we less rational than models of intrinsic and derived utility would suggest. (Thaler and Sunstein, 2008)

The behavioural framework is powerful, and suggests that the answer to the question “Why travel? is “Because I have always travelled, because everyone else does, and because it’s easy”.

The future

In the future, social attitudes to travel might well play an important role in determining patterns of demand. Frequent flyer points may go from being trophies to being a source of shame. COVID-19 appears to be accelerating pre-existing trends, with people travelling less frequently but for longer: videoconferencing is now ubiquitous in white collar sectors. However, social interaction, social capital and serendipity all push in the other direction. Agglomeration and spillover effects have not ceased to exist because of COVID.

Conclusion

In conclusion, wellbeing stems from some forms of travel, and journeys can be both purposeful and pleasurable.

Economics has come a long way in helping to understand and provide a framework for valuing and assessing transport.

However, there are countervailing drivers at play between the theoretical frameworks that do exist.

Even with new technology, the economy still depends on human contact.

There are also challenges to dealing with externalities. value for money and social equity, which will persist after COVID, albeit in a changed context.

Discussion

Iris Ning (Arup) noted that one of the first things she was taught was that transport is a derived demand.

Dick Dunmore (retired) wondered whether the distributional effects of changing travel patterns would differ in cities where the rich live in the centre and the poor in the newer outskirts.

Alexander said that the London Property Alliance had been looking at Google Mobility data for a number of world cities. Travel had fallen in London and New York but less so in Paris and Hong Kong. Paris is small but dense, and those with higher incomes tend to live in flats in the centre: one interpretation would be that most of those who travel to work have no option but to do so. Some work for the Centre for London had considered how many residents could be added in central London as a buffer against future shocks to local businesses – coffee shops, restaurants, dry cleaners – which might otherwise depend on longer-distance commuters.

Tom Worsley (University of Leeds) asked whether and how it would be relevant or necessary to rewrite Transport Analysis Guidance (TAG). Value of time savings still dominates appraisal, arguably as a proxy for multiple second and third order changes.

Alexander agreed that this was complex. John Adams at University College London (UCL) had challenged cost-benefit analysis (CBA) in studies such as that for the Airports Commission: in the past, literal use of the techniques would have favoured an airport in Hyde Park. He was right to be wary of using CBA to make all decisions, but it can't be dismissed just because it is imperfect. First, there is a need to recognise that many infrastructure decisions are political, and that the problem comes when frameworks are used to give politicians cover for their decisions. Decisions may also be better if devolved to those

closest to the people and the area involved, who can take into account local factors. Second, market mechanisms including pricing should be used more where possible: we do not use CBA to plan supermarket locations or product lines. Road user charging, for example, could offer a big step towards better decision-making.

Gregory Marchant (Strategic Rail Authority, retired) said that he was a shareholder in a heritage railway and in a group that owns the Paddle Steamer Waverley, both of which were selling a journey, not a purpose. He asked if one could value the quality of the travel experience: recent rail investment seemed to have favoured higher density and lower quality. **Alexander** said that this reflected the perspective of the Treasury as payer. The market can help deal with hard seats, crowding and poor performance, but the government has conflicting objectives: wanting, on the one hand, to promote railways and have more rail use but, on the other hand, to increase the financial burden that falls on passengers. Treasury wants to maximise revenue and minimise costs. That means cutting services when demand falls (think Covid). But should we not be trying to get people back on the railways (given all the wider benefits to the economy that they underpin such as agglomeration) for example, by having a “fire sale of season tickets”? Lord Ashfield, the first Chairman of London Transport, had been brilliant at recognising the need for branding, marketing and quality. However, this meant having both leadership and freedom to make such decisions. **Iris** noted the tension between objectives and the scope for better use of market mechanisms.

John Segal (independent consultant) noted that significant numbers of passengers will pay for First Class, which was all about a better experience: over half of First Class passengers are travelling for leisure. On the concept of travel time budget, for London he had worked with a rule of thumb of two hours per day commuting, or ten hours per week, but if this were redistributed as fewer, longer trips, the journey time threshold for commuting could rise. **Alexander** commented that this illustrated the need to get things right at local or regional level: London has different issues from elsewhere. Of the average reported trips per year of 953, 768 excluded walking less than a

mile, which implied that there were 185 short trips to facilitate and improve.

Tali Diamant (Atkins) was interested in journey quality and how to create a framework to evaluate it. People will pay a large premium for better seats on a long flight. As Alexander had suggested, should we be appraising pedestrian facilities, where issues were decent, clean, safe and public realm? **Alexander** noted that the rail industry Passenger Demand Forecasting Handbook (PDFH) was used to model the effect of quality on demand, but not to appraise it. One issue is that the railway has a near-monopoly in some markets, where with Treasury encouragement it can get away with low quality and high prices. This contrasted with the willingness to pay “to turn left” when flying, and for services such as the Oxford Tube. The Commission for Architecture and the Built Environment (CABE) had tried to place a value on good street design including footpaths, but it is difficult to work out what pedestrians actually want. At the local level, this may be “clean, green, safe and welcoming”: why does it need to be more complex than that? **Iris** noted that this might also apply to cycling: Leeds had built a cycleway next to a major road, and it had attracted little use. **Alexander** repeated that he thought that local authorities would get things better, and that pricing, or for some modes the lack of it, was not currently right.

Dick Dunmore asked whether more needed to be done to take into account price as well as time. An hour on a local bus, the Underground, a Southeastern Javelin, and an LNER train to Peterborough all had widely different prices and hence affordability for commuting. Do we also need to model a fare budget, perhaps as a percentage of income? **Alexander** noted that, while Lord Ashfield had been passionate about removing “wasteful competition”, the separately-owned and managed Underground lines originally competed for passengers, at least at the margin. Competition can sometimes be an effective means of revealing market prices/values for goods and services.

Report by Dick Dunmore

Rail industry structure: next steps

"Have we finally arrived?"

Richard Davies

Hosted by Arup on Teams

23 February 2021

Introduction

Tom Worsley introduced Richard Davies as speaker, noting that "*he always seems to have been in the right place at the right time*" and that his most recent input had been working with the Department for Transport helping the government understand what can be done under the Williams-Shapps plan for rail.

Richard noted that it was eight years since he last presented to the Group¹ and that, acknowledging Tom's point, that it was perhaps also important "*to exit at the right time*".

Rather than explain the detailed architectural evolution of contracts, track access agreements and associated schedules over the past quarter century, his central point would be that the way the structure of the rail sector had developed in the post-war period had been driven by the pressures and policy priorities of the day. These had since changed and continuously evolved. Government today expects rail to play a much broader role in delivering a range of policy objectives, not just those for transport, than was the case when privatisation was designed in the early 1990s. It is therefore not surprising that this had led to pressure for change.

He would therefore discuss a typology of structures, how British Rail had been structured and restructured, the 1990s privatisation and reform, and the pressures emerging over the period 2015-2020, to frame the Williams-Shapps proposals and how they might lead to change.

¹ (https://transecongroup.org/wp-content/uploads/journal/Transport_Economist_42-2.pdf)

Government's complex relationship to the rail industry

Richard began with two quotations illustrating how the tension between government and the rail industry has been long-running:

"The role of the government has been a major issue throughout the history of the railways in Britain. Nobody ever seems satisfied." (Stephen Glaister and Tony Travers, "New Directions for British Railways", IEA, 1993)

"In my twenty-one years in public transport ... at least half my time has been devoted to organization, reorganization, acquisition, denationalization, centralization, decentralization, according to the requirements of the now regular political quinquennial revaluation of national transport policy." (Sir Stanley Raymond, British Rail Chairman, January 1968, after he was replaced, quoted in Richard Pryke, "Public Enterprise in Practice" 1971)

Three potential commercial/regulatory models for organising rail

Richard introduced three models for how rail might be organised, noting that combinations of them were possible.

The Morrisonian corporation, essentially the model that had been applied to nationalised industries in this country since the 1930s, had professional management, rather than a more politically-driven arrangement, the approach taken in some other countries.

The regulated utility has objectives set by licence or legislation, but these can be altered progressively over time, by the actions of a regulator, who is independent of Government. This step was necessary to give investors a degree of assurance about arbitrary government actions that might harm their interests. In the UK, regulators generally have a statutory obligation to ensure that the utility can finance its activities.

Alternatively, there can be a **commercial contract**. Durations vary, but these generally offer limited ability to vary outputs.

Table 1: three models for the commercial/regulatory organisation of rail

Model		Attributes
A	Morrisonian corporation	Board appointed by Minister
		Professional management
		Objectives set by Ministers
		Capital investment financed directly by Government (since 1955) rather than through borrowing by the corporation
B	Regulated Utility	Broad objectives, set by licence/legislation, with a process for changing licence objectives where necessary
		Regulator, independent of Government
		RPI-X price controls, reset typically every five years
		Generally private sector, funded by debt and equity, but can also be in the public sector
		Examples include BT and water supply
C	Commercial Contract or PFI	Commitment to supply service, sometimes long-term, in exchange for payment
		Supplier takes some risk, such as on delivery dates and cost
		Limited ability to alter outputs
		A commercial relationship, with redress through the Courts
		Can facilitate private sector operation and raising of long-term debt
		Examples include PFI contracts and train leases, including the Intercity Express Programme (IEP) and Thameslink

Table 2: British Rail (BR) from 1948 to 1994

Model	Attributes
Regions to 1980	"Big 4" (LNER, LMS, GWR and Southern), a regional structure which in essence continued into the formation of the British Transport Commission (BTC) in 1948 and then the formation of BR in 1962. Rail had a largely regional structure from the early 1920s until the 1980s.
	The interplay between regions and functions was crucial. There were also moves to privatise some BR activities from the early 1980s: BREL/BRML and the sale of hotels, Sealink ferries and hovercraft.
Sectors 1980 to 1990	InterCity, Network SouthEast (NSE), Regional Railways and Passenger Transport Executive (PTE) services, Trainload Freight, Freightliner and Parcels, and International (Eurostar).
	Initially, small teams holding revenue and cost budgets, "buying" services in from the Regions.
	Demanding financial targets were set by Ministers and became overriding goals: <ul style="list-style-type: none"> • Intercity, Trainload Freight: commercial return • NSE: breakeven in cash terms • Regional/PTE/Freightliner: progressive subsidy reduction
OfQ 1990 to 1992	Organising for Quality Sectors became their own (semi-standalone) vertically-integrated businesses and took control of infrastructure and fleet from regions. Extensive trading arrangements were needed to make this work.

The sectors, introduced by Sir Robert Reid, were initially thin teams focusing on specific markets, buying in inputs from the regions.

Under OfQ, the regions were broken up, and the sectors controlled their own assets, but this required trading with each

other, notably where infrastructure and/or revenue were shared. OfQ was widely praised by managers at the time, but it was only in place for two years and, from the perspective of the succeeding quarter century, it was not clear how it would have dealt with all of the challenges which have since emerged.

Richard also noted that, in principle, either regions or sectors could have been privatised as Model B regulated utilities, an approach BR itself favoured, and this approach would have had much to commend it.

Privatisation

It was important to be clear that rail privatisation was part of the much-broader “supply-side reforms” of the early 1980s. The focus was not solely on railways, but the privatisation of nationalised industries and liberalisation of the economy. Privatisation was taken as axiomatic.

Objectives mentioned at the time included:

- better customer service;
- a more commercial approach, greater efficiency, and lower subsidy requirement;
- getting investment off the public sector books; and
- income from sale of the businesses.

Some of these themes are familiar in Williams-Shapps.

What was less clearly acknowledged at the time was the need for trade-offs between these objectives. For example:

- Allowing a more commercial approach to selling capacity, and open access, might make franchising harder.
- Allowing access charges to be too flexible risked Railtrack’s income falling, jeopardising its sales process, if services were reduced following privatisation. This was anticipated in many quarters, but never happened in practice.

Privatisation therefore required a number of safeguards to stop one part of the industry adversely affecting another, such as:

- the Network Code, which limited the ability of the infrastructure manager and operators to impose costs on each other; and

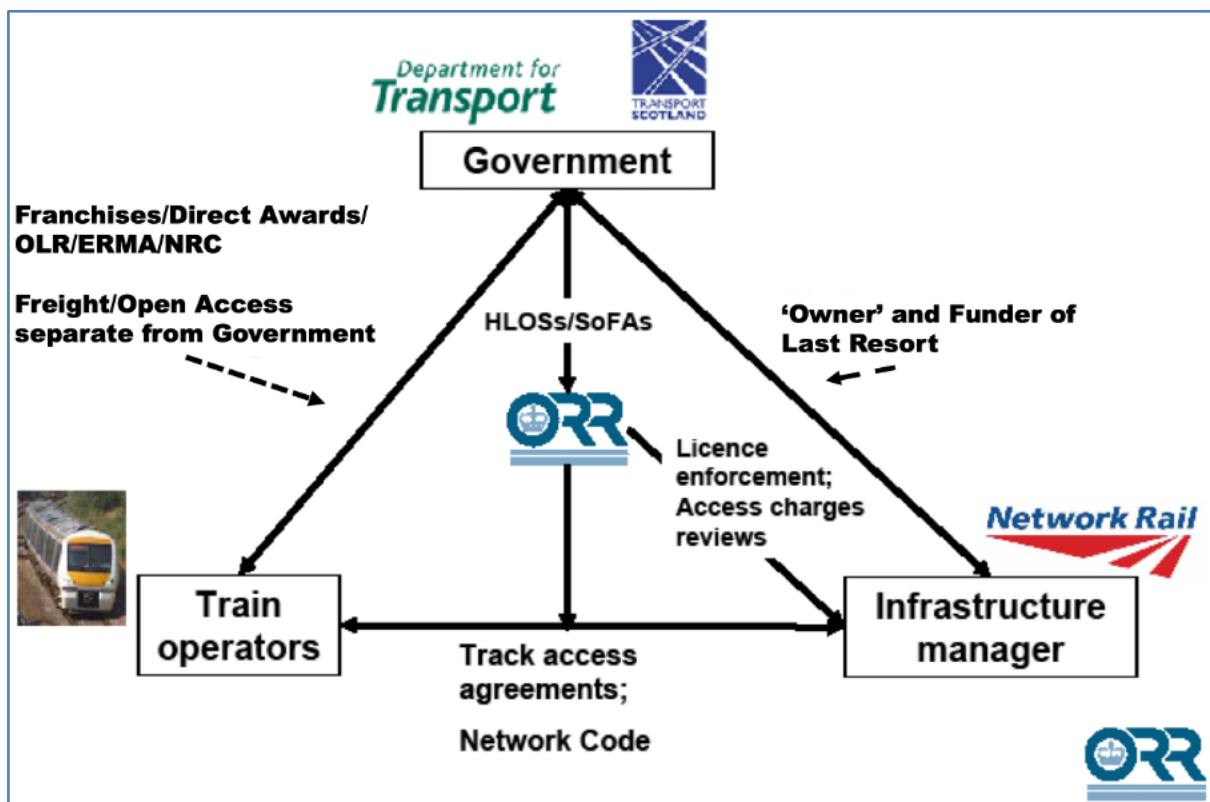
- the Ticketing and Settlement Agreement (TSA), which was deliberately made hard to change, to protect the interests of smaller operators relative to larger ones.

Privatisation might not have happened without these safeguards, reinforced by changes in Competition Law, but Ministers have subsequently found that they mean that it is hard to make changes such as greater coordination between track and train through alliances.

One question that has been much debated is to what extent the railways really were privatised, given the high degree of government control that remained. In the end, Railtrack was only in the private sector for five years, from May 1996 to October 2001, and was highly regulated, and franchises were gradually given more and more obligations. The journalist Simon Jenkins (inter alia a BR Board Member) argued, with some force, that this was less a privatisation than an extension of control from Whitehall.

The privatisation structure is shown in Figure 1, which is drawn from an Office of Rail and Road (ORR) document.

Figure 1: key relationships in the rail industry structure



There are three poles: funders at the top, train operators bottom left, and infrastructure manager bottom right (Network Rail is the successor of Railtrack). ORR's role as regulator is related primarily to infrastructure rather than to operations.

Richard drew attention to four features:

- First, passengers do not seem to appear on the diagram at all! Their interests are mediated mainly via government.
- Second, there is a sharp divide between Network Rail and train operators on the bottom of the triangle: privatisation almost totally separated them, despite the significant coordination needed in practice to operate the system.
- Third, there are essentially three groups – funders, Network Rail and operators – in the relationship, but none is fully “in charge” and, arguably, momentum has passed between them at various points of time. This has created its own instabilities.
- Fourth, the major contractual/regulatory influences have been between Network Rail and ORR, to the extent that it sometimes seems that NR has often viewed ORR, rather than funders or operators, as its client. A similar situation developed between operators and funders.

This approach was effectively a mix of Model B and Model C:

- Infrastructure used Model B, a regulated utility, with ORR as its effective client, setting requirements for five-year Control Periods.
- Operations used Model C, with commercial contracts, with Government as their effective client, setting requirements for up to 25 franchises of varying length.

Richard thought the use of two models, in a situation where a high level of coordination was needed in practice, was in reality the root cause of many subsequent problems. For example, plans for operators and infrastructure have been dealt with through different processes (franchise letting and periodic reviews respectively) and to different time periods (5-15 years for franchises and five years at a time for infrastructure). Franchises and periodic reviews should have been better coordinated.

As an indication that the initial model didn't adapt well to changing circumstances, Richard noted the wide range of reviews of the sector which had since taken place.

Table 3: reviews or changes since privatisation

Start year	Review or change
Ongoing	Network Code
1999	Devolution, beginning with Scotland
2001	Creation of Strategic Rail Authority (SRA)
2001	Customer Reasonable Requirements (through a new Railtrack licence condition)
2005	Railways Act 2005: <ul style="list-style-type: none"> • High Level Output Statement (HLOS) • Statement of Funds Available (SoFA)
2006	Creation of Transport Scotland and devolution of the vast majority of rail responsibilities to Scottish Ministers
2008	Rolling stock leasing market investigation (by the Competition Commission)
2011	Rail Value for Money Study (McNulty)
2012	Brown Review of the rail franchising programme
2014	Bowe Review of the Enhancement Programme, leading to establishment of the Rail Network Enhancement Pipeline (RNEP)
2015	Shaw Report into the future of Network Rail
2017	Formation of Rail Delivery Group (RDG), replacing the Association of Train Operating Companies (ATOC), bringing together Network Rail and passenger and freight operators
2018	Williams Rail Review initiated
2021	Williams-Shapps White Paper

From a transport economics perspective, none of these many reviews had focused on what the right level of government subsidy should be. The assumption was that efficient costs were

those that emerged from the franchise tendering process and the regulation of the infrastructure, rather than there being a policy decision on the right level of costs and subsidy.

Legitimacy

Richard saw that a fundamental issue with the structure was that of its “legitimacy”: *“it was very complicated, and no one quite believed in it”*. From the outset, it was widely criticised by commentators, perhaps because the value of privatising an industry that required subsidy was not self-evident. Journalist Christian Wolmar identified this issue early on, and the audience might recall that he had a weekly newspaper column for some years identifying a range of inexplicable consequences in terms of practical examples, such as operator-specific fares, which he turned into a successful book.

The changed policy environment

Whatever the merits of the structure as it stood in the 1990s, it was essential to recognise that the whole policy environment for rail has changed completely since then. Table 4 illustrates some examples:

- Cycling is not clearly any single party’s responsibility, yet the demand to make the rail network much more cycle-friendly is very strong. To do this requires space on trains, racks and lifts at stations, and ticketing and reservation processes. Who is the lead party?
- The information revolution, including widespread use of smartphones, has completely changed the relationship with many passengers, but the privatisation policy was in effect that there should be a free market in apps. Although this arguably ensured more rapid development, the result is that there is no single national app for rail bookings, and different features are offered by different apps, a situation that many users of the network find frustrating.

Table 4: changes since the structure adopted in the early 1990s

Transport Ten Year Plan (2001), New Approach to Transport Appraisal (NATA)
Faster growth of large cities than other cities and towns, London as a world city
Rapid growth of intermodal freight, Gradual decline of bulk traffic such as coal
Mode shift, urban air quality and Net Zero
Devolution of rail responsibilities to Scotland, Wales, London and Merseyside
Megaprojects: <ul style="list-style-type: none"> • Channel Tunnel Rail Link (CTRL, now High Speed 1) • Crossrail • High Speed 2/3 • Northern Powerhouse Rail • East/West Coast Main Line (ECML and WCML) upgrades • Digital Rail
Cycling
Access for all, diversity and inclusion
Information revolution
Much higher expectations on transparency and consultation
Mobility as a Service (MaaS)

The scale of renewal and enhancement listed in Table 5 shows that the network is now in a completely different place.

Table 5: unprecedented investment

West Coast Main Line (WCML) upgrade (40 minutes faster to Manchester, 2-3 more fast trains per hour between London and Rugby, 125mph operation)
Crossrail, a wholly new, high-capacity underground line in London, linking Reading, Heathrow, Woolwich and Shenfield
High Speed 1, a new 300kph line to Kent and the Continent
Thameslink, a 24tph north-south route in London
Great Western (GWML), electrified to Bristol and Cardiff
Electrification of Edinburgh-Glasgow-Stirling
East Coast (ECML) upgrade: two more fast trains per hour, and a better power supply
High Speed 2 (HS2), a wholly new line to Birmingham, Manchester and the East Midlands
Station rebuilding at, inter alia, London Bridge, St Pancras, King's Cross, Birmingham New St and Leeds
Transpennine Upgrade/Northern Powerhouse Rail
10,000 new rail vehicles: the average fleet age is 17 years
Gauge clearance for freight, allowing 9'6" containers (W10/W12) on more of the railway.

Many of these projects were delivered outside the regulatory system devised at privatisation, which did not envisage much investment. In practice, annual investment of around £500 million per annum before privatisation has grown to around ten times that level.

More fundamentally, privatised rail's financial structure was not designed to support a programme on anywhere near that scale: Railtrack's initial market capitalisation was only £1.9 billion, so even a significant rights issue would have raised too small a sum. Sir Alastair Morton, on appointment as Chairman of the Strategic Rail Authority (SRA) in 1999, had rapidly recognised this, and advocated a range of "Model C" PFI contracts designed to raise funding via debt, but this was opposed by Railtrack/Network Rail and ultimately never took off, other than through the Evergreen projects sponsored by Chiltern Railways. Gradually, Government

has taken on the role of specifier and funder for almost everything and, other than rolling stock and freight, there has been very little private sector financing. Increasingly, this has been done through grants, rather than even through debt financed secured against Network Rail's Regulatory Asset Base (RAB), an approach that commentators such as Sir Dieter Helm has long advocated for infrastructure-heavy networks. The RAB approach essentially went into abeyance when the Department for Transport elected to take over the specification and funding of enhancements through the Rail Network Enhancements Pipeline (RNEP) process in 2016. For HS2, provision of grant finance is explicit policy both for infrastructure and for rolling stock, which is not being bought through a leasing company. In essence (and somewhat ironically!), funding for infrastructure has reverted to the arrangements under British Rail.

Where are we now?

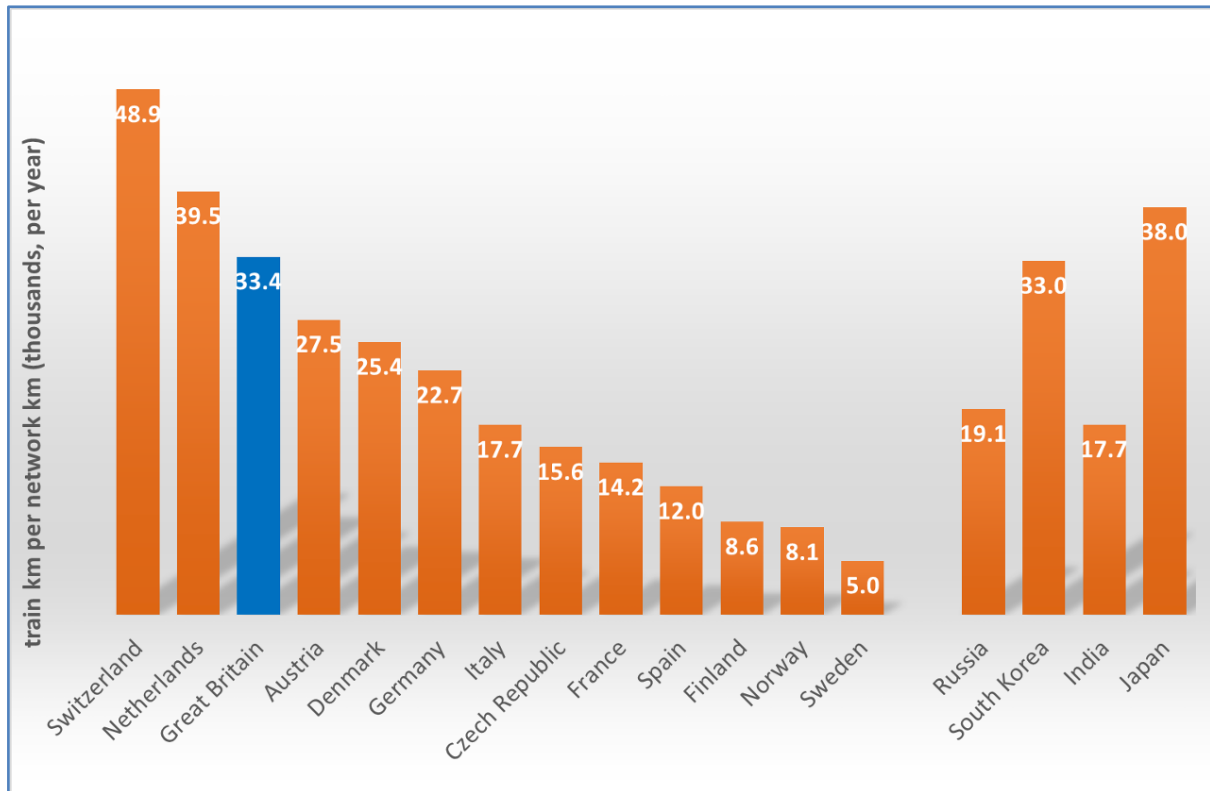
Richard had two graphical examples of the issues faced by the current system, on which he thought that members of the group might be interested in carrying out useful research:

- relative network utilisation; and
- why rail's operating margins had not improved even as revenue rose.

Network utilisation

Figure 2, based on work done by Ben Condry at Imperial College using data from UIC, shows how busy the rail network was in 2018 relative to selected others. (The European Commission's Rail Market and Monitoring System (RMMS) has similar data.)

Figure 2: the rail network of Great Britain is intensively used



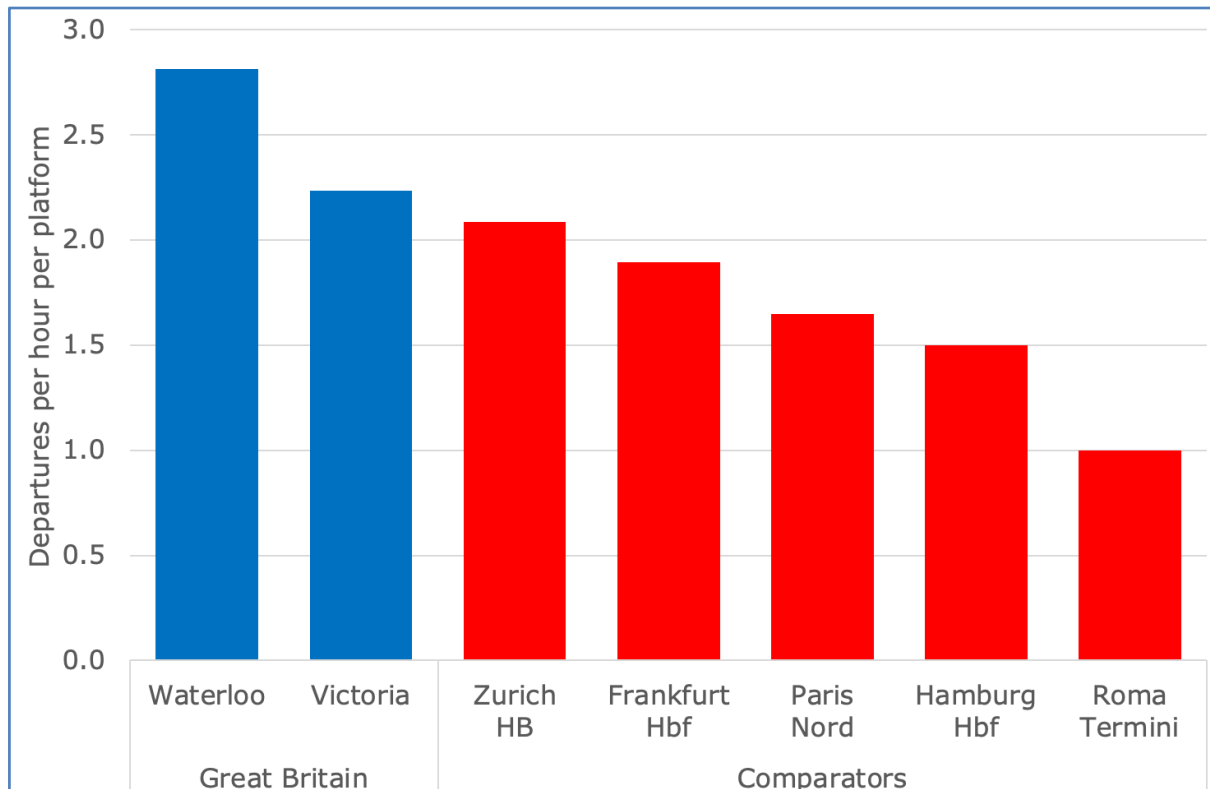
Source: UIC data for 2018, including passenger and freight services

The figure provides a measure of how intensively the network is used, annual passenger and freight train-kilometres divided by network length. This shows that Great Britain ranks third among European networks and indicates how busy the system is, something that is often overlooked in comparisons with the German and French networks.

However, this measure does not allow for the relative busyness of different parts of the network, and could reflect a very frequent service in one region and a sparse one in another.

Figure 3 makes a second comparison, the departures per terminating platform per hour at a number of major stations in 2015.

Figure 3: the rail terminals of Great Britain are intensively used



Source: www.bahn.de

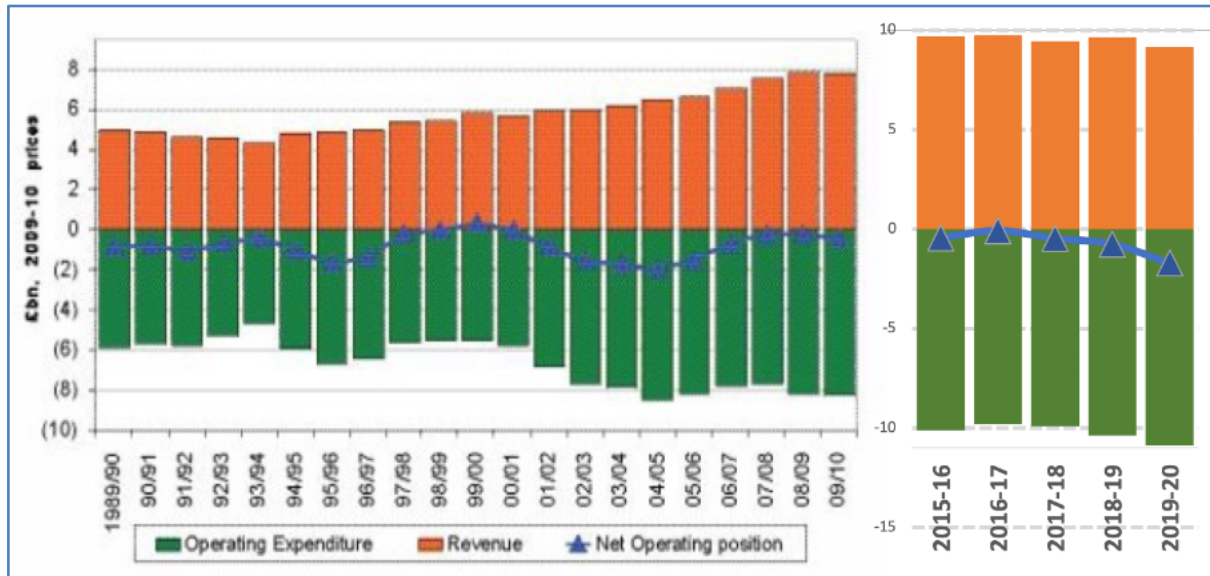
Data based on July 2015 arrivals at terminating platforms, 0730-0931

The comparison could also be said to highlight the relative inefficiency of terminating, rather than through, services. The average platform at Waterloo or Victoria dispatches only two trains per hour in the morning peak, much less than is possible by connecting termini via through platforms, as has been done in many stations in Paris. Cross-London links Thameslink (completed in 2018) and Crossrail (opening in 2022) were both conceived to operate 24tph per platform.

Cost increases

Figure 4 compares operating expenditure and revenue data for 1989/90 to 2009/10 (left) and 2015/16 to 2019/20 (right).

Figure 4: does rail have high fixed costs?



Source (left) Rail Value for Money Study (McNulty report), 2011

Source (right) ORR Data Portal Table 7216, February 2022, converted to 2009/10 prices using GDP deflator

Operating expenditures includes infrastructure and train operation/leasing costs but exclude infrastructure investment/depreciation.

Despite rail normally being said to have high fixed costs, increasing demand has not apparently led to better operating margins. In other words, much of the increased revenue has been absorbed by higher operating costs.

It remains something of a puzzle why there have been no returns to volume. Richard suggested that this is something that TEG members might be interested in researching in future.

The Williams-Shapps plan for rail

Richard listed some of the major failures that had happened under the privatisation structure:

- the collapses of Railtrack, the South Eastern franchise (twice) and the East Coast franchises (three times);
- the challenge of coordination between infrastructure projects and new or modified rolling stock, a task which the Department for Transport had essentially taken, rather

than attempt to do so via contracts, which almost sank Railtrack on the West Coast franchise; and

- the failure of the May 2018 introduction of timetables for new cross-city infrastructure in Manchester and London.

He noted that the many attempts to reform the privatisation structure listed in Table 3 have never been quite comprehensive enough. In particular, we have never resolved how to have a franchising system in an environment of constant change, especially when the franchises themselves have little balance sheet capability to deal with the risks associated with, for example, the large upgrades listed in Table 5.

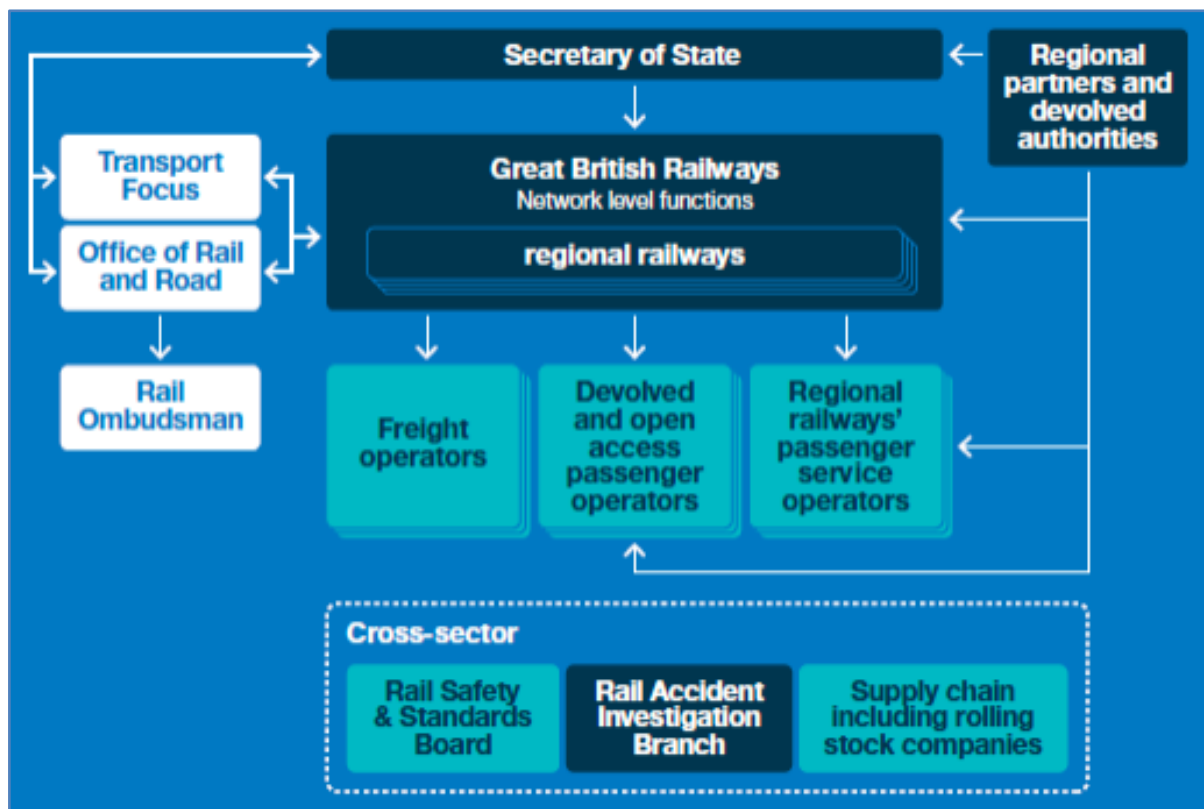
The failure of the May 2018 timetable was the critical point from which there was no way back.

The features of the new approach, as listed in the White Paper, were:

- a “single guiding mind”, Great British Railways (GBR);
- a simpler system, focused on delivery and efficiency;
- passenger service contracts (PSCs), with some degree of demand incentive for at least some of them;
- reform of fares and ticketing, which may be easier if franchisees no longer “own” revenue;
- private sector involvement;
- a new focus on cost and productivity; and
- a new access policy and changed role for ORR.

The White Paper seemed to offer “Model A with some Model C”, with a strong Model A Government role and Model C contracting where possible, such as for train operation.

Figure 4: the future industry structure



Source: Williams-Shapps White Paper, 2021

In practice, given the scale of investment and initiatives likely to be taking place over the next few years, it was not clear whether any other approach would now be possible.

Great British Railways would be at the centre of a regional structure (where we began in the 1920s!), but with an increased role for regional partners and devolved authorities, notwithstanding the well-known difficulty of identifying parts of the network that could be managed independently. Freight, which is largely interregional, would be largely unchanged.

Conclusion

At privatisation the focus had been cost-efficiency, and improvements to customer service, within a stable or even declining revenue. The chosen mix of Models B and C created much tension, and the model was neither successful nor suitable to deal with the much broader policy environment illustrated in Table 4.

Now we expect the industry to deliver much more capacity, to decarbonise (a whole subject in itself), to be accessible and

welcoming to all, and to respect devolution to local interests, a completely different scope.

The new approach, Model A with some Model C, does bring Great Britain slightly closer to the approach adopted in countries such as Sweden and Germany, who have retained some degree of coordination between track and train but whose franchising systems are simpler because they exclude long-distance interregional services which are, in principle, run on commercial lines.

However, it was essential for everyone to recognise that these types of changes take a long time to work through. Privatisation, first examined in detail in 1991, took 7-8 years to plan and 10-15 years to bed in. COVID has triggered a shift to short contracts without revenue risk, which could be one of the options under Williams-Shapps, but there remains a lot to do.

Discussion

David van Rest thanked Richard for his presentation. What had puzzled him most was how the November 2021 Integrated Rail Plan (IRP), despite its commitment to continue investment, seemed to have been launched in a way guaranteed to see it widely criticised. It appeared to accept a Curzon Street station with an 8-minute walk to other services, making a very complicated Midlands hub. **Richard** said that this had not been his focus, but agreed that the IRP did represent an enormous programme of improvement for the northern rail network.

Peter Gordon (Editor, the Transport Economist) had two questions. First, had costs risen either because money had been thrown at the industry, or because higher income had been squandered as higher costs? Second, how will the new structure achieve cost reductions. For example, a fight with the unions would need to be underwritten by government. **Richard** said that in BR days, efficiency was mandated, in that the industry was given objectives and resources and told to achieve the former with the latter. This may, with hindsight, been more effective than the combination of competitive tendering and independent regulation since 1994. Capital expenditure has been a much larger part of the cost base than was envisaged at privatisation, and has proved harder to control, particularly

given the difficulties of either determining optimum specification or minimising whole-life costs. Andrew Smith at ITS Leeds has been carrying out interesting research in long term efficiency trends for some time, trying to understand why privatisation had had such limited effect on operating and capital cost efficiency, and it might be worth inviting him to give a future TEG talk.

John Dodgson (independent consultant) asked whether we over-incentivise frequency, which adds to demand, but also to congestion and delay. **Richard** noted that evidence suggests that frequency is a significant influence on demand and said that, while the track charging system internalises congestion in principle (through Schedule 8 and the capacity charge, when it existed), it is not clear that the various incentives have much effect, given the strong influence of the Department for Transport on specification. Today, the network has become quite busy, so in many places it was possible to run longer trains but rarely more of them. The advent of Great British Railways may allow the question to be reopened on a broader canvas, with a freer hand to “tweak” decisions to get better outcomes and, indeed, some of this is already happening under the various COVID recovery timetables.

Peter White noted that bus privatisation in the 1980s had led to a fall of around 45% in unit costs per bus mile, in marked contrast with the limited reduction in rail operating costs. Secondly, a 1976 study had noted that the Netherlands had stimulated demand through increased off-peak frequencies. **Richard** agreed that the Netherlands’ core Randstad network has service intervals of 15 minutes for fast and slow trains or even 10 minutes on some of the key intercity routes, but pointed out that the frequency increase had required significant investment in four-tracking, grade separation and station expansions, so it has been far from costless. On buses, a significant difference to franchised rail operators in the approach to privatisation was that, in essence, bus companies could be put out of business by competition in the market. But the franchised rail operators, as often large regional monopolies providing what was widely regarded as an essential service, were set up as a company that could be handed over to a new franchisee at contract end. Arguably, this meant that there had been less pressure to reduce operating costs.

Oliver Lewin said that he had concluded that rail privatisation had failed, but wondered whether the balance sheets of the Organising for Quality (OfQ) sectors would have been able to support recent capital investment, a model closer to that adopted in Japan? **Richard** said that the margins achieved by the pre-1994 sector businesses, even if they had grown with demand, would have been much too small to support investments on the scale of Thameslink. Neither OfQ nor, in reality, privatisation was designed to provide a good commercial framework for major capital investment. It was worth noting that similar issues had arisen in electricity privatisation, on which he had also worked, where many of the arrangements devised in the 1990s had had to be completely reworked to deal with issues such as decarbonisation and the location of renewable generation sources. **Oliver** commented that the retail electricity market was now imploding: it seems not to have been designed to be stable if energy prices rose so high.

Simon Temple had a number of questions. Will it really be possible to avoid the need for delay attribution? Will service specification still remain remote from the passenger? What will be the change mechanisms for in-contract changes to service specifications? Why will the operators remain in charge of fleet specification and leasing? Will the Secretary of State's right to intervene be used as sparingly as is intended? **Richard** acknowledged these issues but noted that the current level of political involvement is very high. Many issues will remain in the hands of Ministers, whether because they feel they need them (because they are so important to passengers and MPs) or because they are effectively stuck with them (as with crowding). It would probably not be appropriate for the Department for Transport to be involved, for example, in the selection of detailed matters such as selection of seat moquettes, as has happened recently in the case of the IEP trains.

On the specific issue of performance, the intention is that it becomes more a shared endeavour, rather than infrastructure and operator managements being adversaries, as too often has happened in recent years. This was all the more so because rail systems (signalling, automatic train operation, electrification, regeneration, real time passenger information and even infrastructure monitoring) involved both infrastructure and the

operators' assets, making the idea of "hard" interface even less tenable.

Mark Sullivan asked what had happened to Directive 91/440/EEC: did this not still apply? **Richard** noted that this Directive only required accounting separation and was not as demanding as is sometimes supposed. It and subsequent EU legislation remained in place (as with all EU law) as "Retained EU Law" (REUL), until such time as it was changed through UK legislation. In practice, networks in Germany and Italy had retained greater integration while remaining compliant with the further changes in EU law made beyond the 1991 reforms intended to increase the separation between track and train.

Tom Worsley thanked **Richard** for his presentation and discussion and drew the meeting to a close.

Report by Dick Dunmore

Rail industry contracting, competition and capacity: next steps

Dick Dunmore

Hosted by Arup on Teams

23 March 2022

Introduction

Dick began by stating that his talk would be based on public information and, regrettably, could not describe exactly how contracting, competition and capacity will be managed under Great British Railways. He would use the mix of passenger operators on the East Coast Main Line (ECML), which has up to five passenger operators on some sections, to review aspects of:

- the rationale for competition in the market;
- the assumed objectives of the rail industry under Great British Railways; and
- the practical issues likely to emerge.

He would not claim to have a solution to the issues identified.

The (European) legislative approach

The EU's framework for rail competition, which applies in Great Britain as "Retained EU Law" (REUL) unless the legislation is changed, is broadly the same regime as for local bus services outside London:

- by default, rights of access (though this does not necessarily mean competition); and
- where necessary, subsidy (through a Public Service Obligation (PSO) or franchise) and/or exclusive rights.

The underlying assumption is that open access and PSO services are clearly distinct. However, exclusive rights would not be necessary if no point-to-point journeys within a supported PSO could be offered commercially and, in practice, many PSO packages were designed or expected to cross-subsidise between viable and loss-making routes.

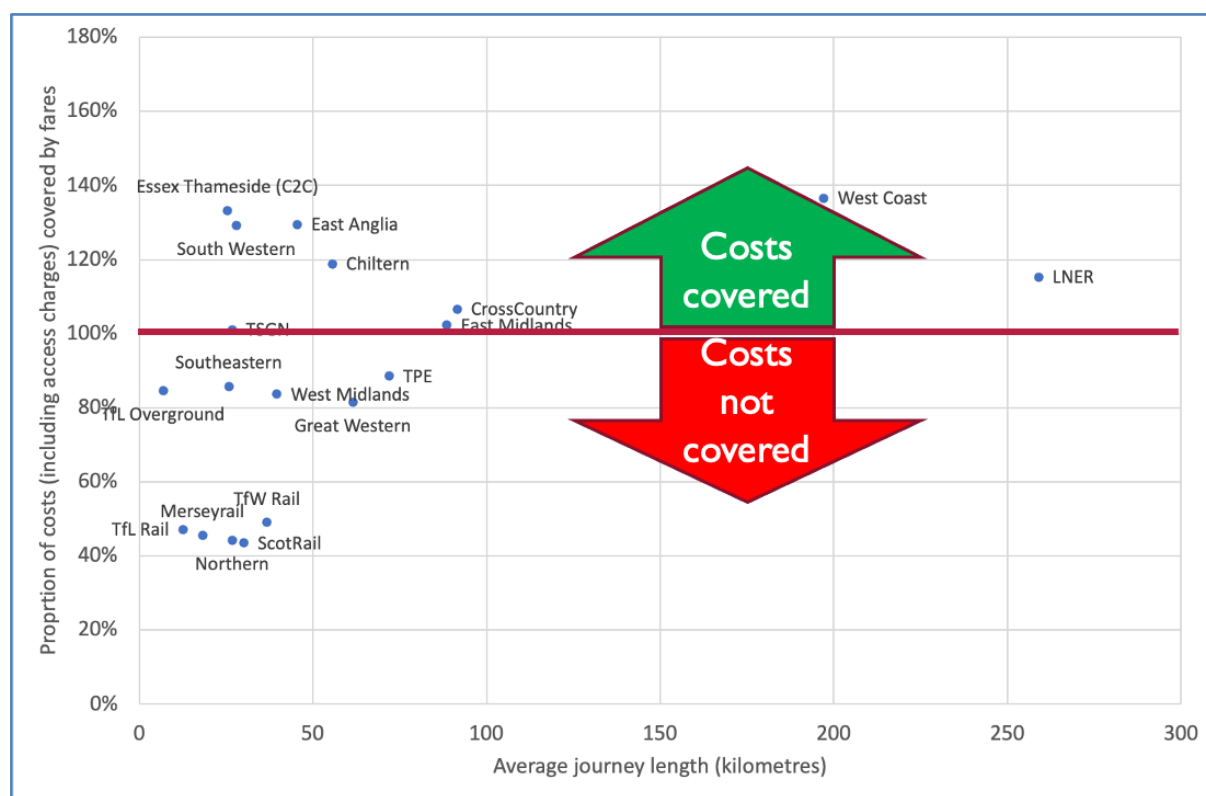
Furthermore, net subsidy is not transparent when PSO operators are on a gross cost basis and/or the contracting authority does not identify, or publish, revenue attributed to rail. Finally, viability depends on (or can be manipulated through) access charges, rolling stock leasing and also fares.

Competition: viability, access charges and fares

The franchises in Great Britain originated in the pre-existing sectors and service groups, with little or no attempt to identify which elements within them were viable.

In 1994, Railtrack recovered all infrastructure costs through access charges, and only one or two franchises covered their costs. By 2019-20, shown below, the Government paid Network Rail directly, and a number of franchises could pay premia.

Figure 1: Journey length and cost recovery of rail franchises



Source: Office of Rail and Road (ORR) data for 2019-20

Excluding access charges, even more franchises are capable of covering their aggregate costs. However, their viability depends not only on obtaining infrastructure capacity and paying access charges but also on the prevailing PSO and/or regulated fares.

A case study: the East Coast Main Line (ECML)

The ECML is the obvious “poster child” for rail liberalisation. Even in 1994, with Railtrack’s cost-recovery access charges, the ECML’s long-distance “InterCity East Coast” services were collectively profitable. The vision at privatisation was that existing services would be franchised and that new entrants would be welcome. As costs fell, more operators would enter, and the need for franchises would decline. Dick did not recall any discussion of how franchise specifications could be cut, or “Who would serve Retford, Grantham and Berwick-upon-Tweed”?

What actually happened was that competition had to be “moderated” (through “exclusive rights”) to limit the cost to the then Office of Passenger Rail Franchising (OPRAF), and franchises increased frequencies and grew demand.

New entry took some time to appear. Hull Trains appeared in 2000, six years after privatisation, followed in 2005, after eleven years, by Grand Central, which added a second destination three years later. Other liberalised European rail networks have seen new entry over similar timescales.

ORR’s 2016 “Decision letter” on applications for access

Additional capacity on the ECML was expected to allow 7½, up from 6, long-distance paths per hour from May 2021. In 2015, ORR called for applications to use the additional capacity. More additional capacity was requested than could be met, with some of the applications using stock not previously used on the ECML.

ORR used its powers and duties (under Directive 2012/34/EU, Regulation (EU) 2016/545, and UK law) to consider capacity and performance, costs and benefits, and the financial effects on existing operators and the Secretary of State. It held consultations and industry hearings (12 June 2015, 14 October 2015 and 4 March 2016) and commissioned extensive modelling by CH2M. This examined options such as whether a new open access service to Edinburgh should be slower and hence overtaken en route.

All the requests met ORR’s Not Primarily Abstractive (NPA) test, replacing the original approach to moderation of competition, that they generated over 30p new revenue per £1 abstracted.

However, ORR identified a number of practical and methodological issues in its analysis:

- There was a delicate balance to ensure that both new and existing services were viable.
- Decisions were needed on the sequence with which services were treated in the tests, and hence which services were base and which were additional in each test.
- Assumptions were needed on whether existing rolling stock was a sunk cost.
- Judgements were needed on what the franchisee could reasonably have foreseen when it bid.

Dick's view was that the process was thorough and (relatively) transparent, but not the market-driven outcome envisaged in 1993.

Services on the ECML in 2022

Figure 2 overleaf shows the 2022 ECML pattern of services.

Franchised local services, almost certainly requiring subsidy, run within London and East of England, North East England, and Scotland, but not in the East Midlands or Yorkshire and the Humber. Uniquely, Chathill is only served by local services from further south, meaning that passengers between there and stations further north must travel south to Alnmouth.

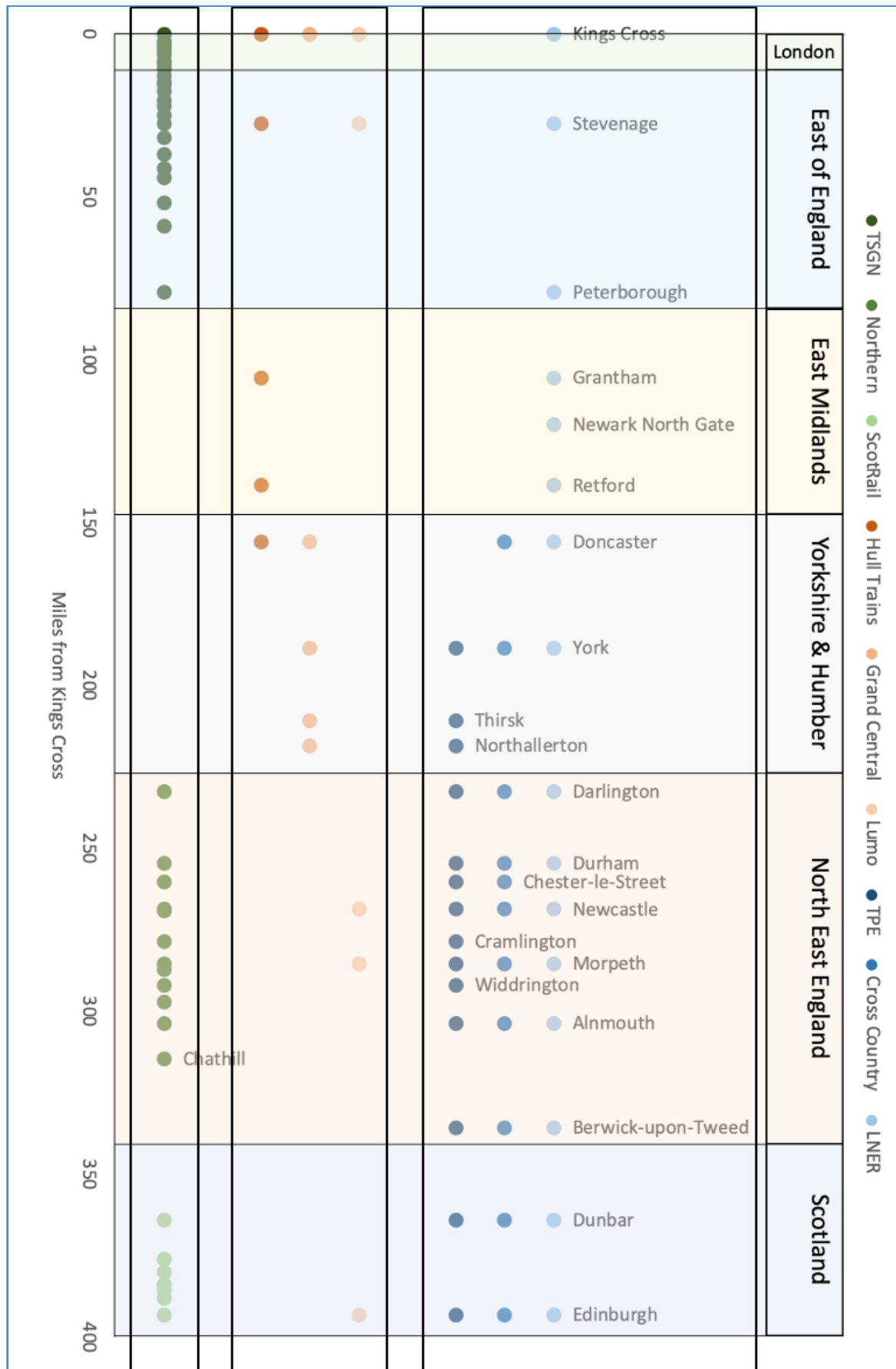
Unsubsidised open access services are provided by:

- Hull Trains, calling in the East Midlands and leaving the ECML at Doncaster;
- Grand Central, calling in Yorkshire and the Humber and leaving the ECML at Doncaster or Northallerton; and
- Lumo, not calling between Stevenage and Newcastle.

Franchised long-distance franchise services are provided by:

- from London, LNER;
- from Doncaster, CrossCountry, centred on Birmingham; and
- from York, TransPennine Express, centred on Manchester.

Figure 2: East Coast Main Line services by operator and region



The role of the open access services

Dick commented on how the open access services all complement the franchised ones, but in different ways.

Hull has 8 direct trains each day, 7 by Hull Trains and 1 by LNER, which are on average 24 minutes faster than other listed services or connections. Hull Trains therefore looks like the main, regular-interval, direct operator.

Sunderland has 6 direct trains per day, 5 by Grand Central and 1 by LNER. Grand Central is on average 9 minutes faster than the alternatives and is direct, but barely any faster.

Bradford has 6 direct trains per day, 4 by Grand Central and 2 by LNER. Grand Central is on average 18 minutes slower than alternatives involving a change, so looks infrequent and slower but is at least direct.

Edinburgh has 39 direct trains per day, 4 by Lumo (which will increase to 5), 7 by Avanti (slower, on the WCML via Preston) and 28 by LNER. Lumo has the same average journey time as LNER, so looks like the same journey time, but less frequent.

Table 1 summarises their competitive position of the open access operator on each route.

Table 1: ECML open access compared to franchised services

End station	Open access as share of connections	Time end to end	Changes	Fare
Hull	23%	24 better	Fewer	Lower
Sunderland	14%	9 better	Fewer	Lower
Bradford	12%	18 worse	Fewer	Lower
Edinburgh	11% (will be 13%)	Same	Same	Lower

Dick noted that these were all open access services, but that at:

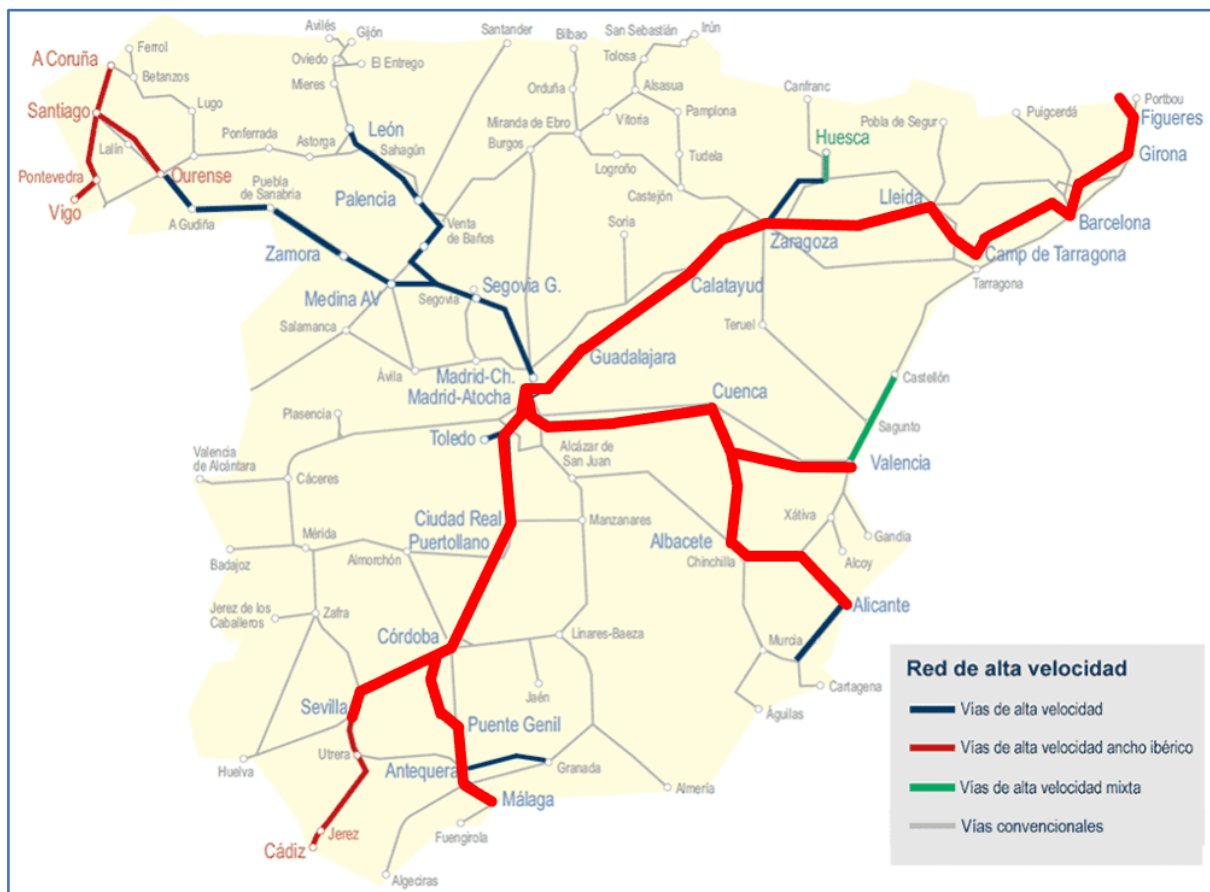
- To Hull and Sunderland, if the open access service ended, it could be added to the franchise.
- To Bradford, the open access service offers a weaker improvement, but still benefits points north of Doncaster.
- To Edinburgh (and Newcastle), the open access service offers similar journey times but lower frequency and fare.

De jure, this is all “open access” but, de facto, it could be argued that ORR has expanded the existing franchises to cover Hull, Sunderland and Bradford and has added a low-frequency low-cost competitor on the densest service.

Another approach: ADIF in Spain

Spain has historic broad- and narrow-gauge networks. To these have been added a new high-speed standard gauge network, with few stations, use of which had been limited. For the December 2020 timetable, ADIF, which is both the infrastructure manager and the contracting authority, let three packages of paths on each of the three corridors shown in red in Figure 3.

Figure 3: Routes in Spain with competing service packages



On the route between Madrid to Barcelona, 70% of total capacity was divided into three packages, A, B and C. After these had been allocated, as shown in Table 2, requests for the remaining 30% of capacity remained possible.

Table 2: Result of ADIF tenders of high-speed capacity in Spain

Package	Trains	Winner	Owners	Brand	Fleet	Start
A (63%)	Up to 3/hour	Renfe (incumbent)		Renfe	Existing	Ongoing
				Avlo	2	2021, June
B (26%)	Hourly	Ilsa	See note	Iryo	23	2022
C 11%)	4-5/day	Rielsfera	SNCF	Ouigo	14	2021, May

Note: Ilsa is owned by Air Nostrum and Trenitalia.

The outcome expected is that “frequency drives fare” and initial reports are promising. Note that, as proportions of the total, Lumo’s London-Edinburgh service is similar to Package C.


What does this mean for contracting?

The rights awarded by ORR and used in 2022 will all eventually expire, in 2029 in the case of Hull Trains. New decisions on the allocation of capacity will be required by then, if not before.

Figure 4 shows an extract from the Government’s “Levelling Up White Paper” on which Dick had highlighted:

- green positive messages;
- red caveats or “weasel words”; and
- orange indicators of how decisions would be made.

Figure 4: extract from “Levelling Up the United Kingdom”



Give local leaders greater say over how their local railways are run through new partnership agreements

As set out in the Williams-Shapps Plan for Rail published last year, the UK Government will also use the newly created Great British Railways (GBR) to give **local leaders** greater say over how their local railways are run through new partnership agreements. In the period before GBR is operational, the UK Government will commission the new GBR Transition Team to explore opportunities to improve local engagement. This will include developing **successor partnerships to those already in operation** to align them with the ambitions of the Williams-Shapps Plan for Rail.

These partnerships will encompass the **whole passenger offer** and long-term strategy for railways in a local area. **Depending on** the needs and capacity of different areas, these **could** include the ability for local leaders to integrate **ticketing and fares** control **stations** and **buy additional services** or infrastructure to achieve local transport and housing priorities more effectively than at present. **using funds raised locally**, GBR will be the “guiding mind” for the entire rail system and will be required to consider **wider network impacts** of local proposals. Existing devolved responsibilities in Scotland, Wales, Merseyside, Tyne and Wear and London will be maintained.

Local objectives for rail services

Dick speculated that local objectives for rail might typically be limited to socially necessary local and regional services such as:

- early morning; morning and afternoon peak school and commuter; off-peak; late evening; and weekend services;
- direct trains to London; and
- good connections to everywhere else.

The “rest”, which local authorities would be prepared to leave to the market, might prove to be a small or empty set.

What was not clear was how conflicts between requests from multiple independent authorities would be easier to resolve than conflicts between requests from multiple competing operators. It was easy to grant powers to local leaders, subject to local funding and a guiding mind, but:

- What would be the overall governance, decision-making process and timescale?
- How would it produce an agreed timetable?
- How would it differ from a continental “Taktfahrplan”, which relies on long-term planning by consensus?

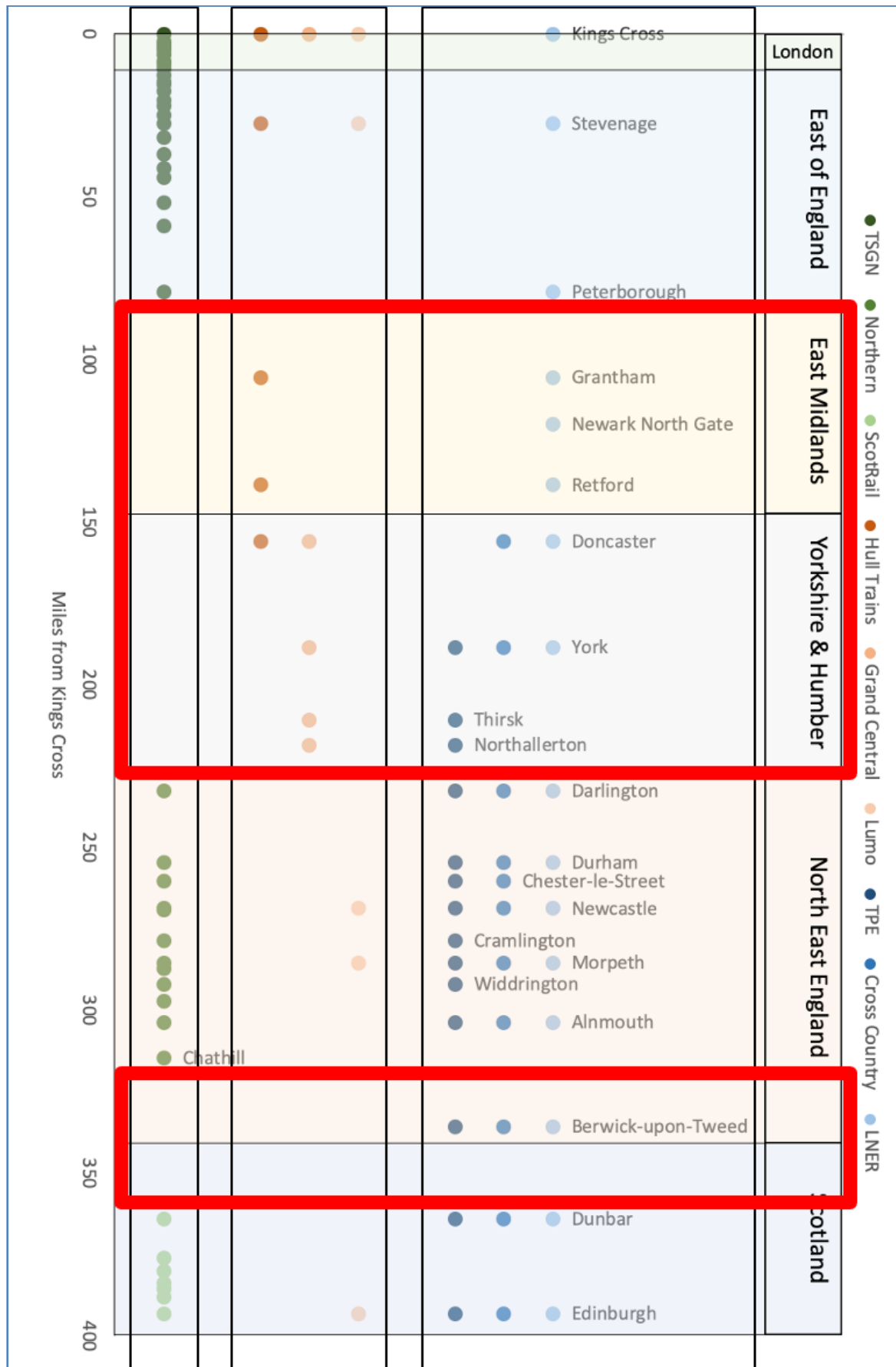
Retford, Grantham and Berwick-upon-Tweed

There remained the issue of parts of the line with genuine social requirements but too few stations to justify a local or regional service. Retford, Grantham and Berwick-upon-Tweed, identified as challenges in the early 1990s, lie on long, relatively empty, parts of the line, as shown in the red boxes in Figure 5:

- Grantham (population 35,000) and Retford (22,000) are served by LNER and open access Hull Trains, now with six trains a day, every two hours.
- Berwick-upon-Tweed (12,000) is only served by LNER. Transport for Scotland would like to serve it, but there are practical difficulties.

If services are needed to/from these stations, who should specify and fund them? Should East Midlands have a right to a local partnership for its three ECML stations? Could it meaningfully specify services between, to and from them in isolation?

Figure 5: East Coast Main Line "gaps" with no regional service

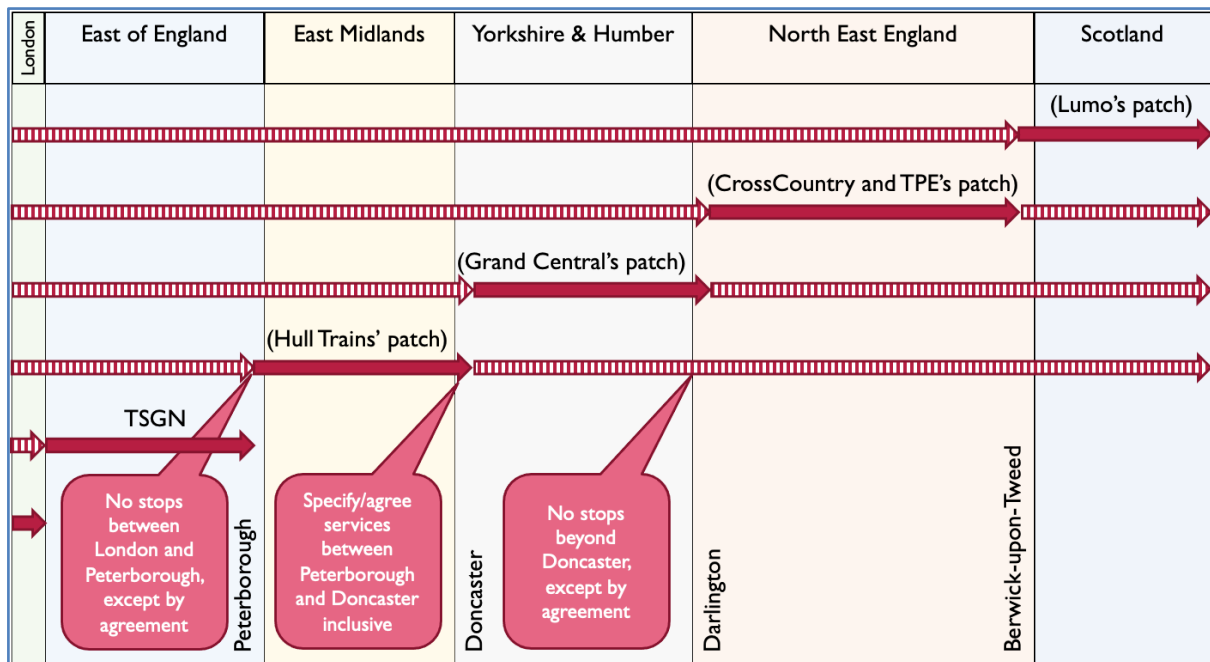


Could each region specify its own services?

Dick noted that, at first sight, the regional geography maps fairly well to existing operators, and longer-distances services to/from London could transfer to HS2 when and if it would help.

He speculated on whether the existing operators' roles could be developed to have a separate franchise for each region, illustratively on the basis shown in Figure 6.

Figure 6: A possible "layer cake" of services specified by regions?



Boundary stations might need to be agreed, such as at Peterborough, Doncaster, Darlington and Berwick-upon-Tweed. Ground rules might be that each region had the right to specify stops up to these boundaries, and in London, but that any other stops would have to be with the agreement of the region in which they lay. Figure 6 shows how, for example, East Midlands might specify a service not unlike that of Hull Trains, connecting London, Peterborough, Grantham, Newark, Retford and Doncaster and, by agreement with Yorkshire and the Humber, continuing to Hull.

However, the ECML is not a blank sheet of paper, but is already full, because all its capacity has been allocated. Many other lines are also full, in some cases following capital investment to provide sufficient capacity for services supported by a business case.

Even if HS2 created the opportunity for a major service restructuring, other practical issues would emerge:

- Could Kings Cross handle more operators, each with their own stock, which means more platforms?
- How would cross-border connections, fares and ticketing work?
- Would many interregional passengers have to change at Peterborough, Doncaster, Darlington (and Berwick-upon-Tweed)?
- Who would control stations and ticket machines, and their branding and “look and feel”?
- Even if this worked on ECML, could it work on other interregional corridors?

Dick concluded that it was unlikely that dealing with multiple local service specifiers would be any easier than dealing with multiple competing train operators.

If ORR’s process is good or best practice, something like it would still be needed to deal with multiple requests which cannot all be met, and to identify the best possible compromise on capacity and performance, costs and benefits. Will GBR’s processes be transparent and accepted?

As a reminder of the political impact to any timetable change perceived to worsen services at even a single station, the Integrated Rail Plan (IRP) had already led to headlines such as *“Newark and Grantham MPs to fight tooth and nail against Department of Transport plans to cut rail services”*.

What does this mean for competition?

Those advocating privatisation often argued that competition would stimulate innovation, leading to better services and lower costs. While there is wide agreement that competition can have these effects in principle, Dick questioned the extent to which it can still do so in practice on a congested network, as summarised in Table 3.

Table 3: Scope for operators to innovate to compete

Aspiration	Problem(s)	Outcome	
Timetable	Many main lines are full. Operators cannot be timetabled independently (ADIF agrees).	X	Capacity is not made available for near-duplicate services. Direct competition is very limited.
Connections	In theory, complementary operators could plan sequentially. In practice, they don't or can't.	X	Limited scope to plan connections without a repeating "Takt" timetable. Competitors may also need through Advance fares for usable connections.
Price/fare	Passengers like choice but not complexity or regret. (All regret is caused by choice?) Low fares cut scope for cross-subsidy or rent capture.	✓	The government is reviewing fares. How will it choose between devolution and consistency, or simplicity and revenue-maximisation?
Quality		✓	There is variation in "look and feel".

For timetabling, much of the network is full and operators cannot plan their timetables independently of each other (ADIF agrees). As a result, capacity is not made available for near-duplicate services, and direct competition is in any case extremely limited.

For optimal connections, in theory complementary operators could plan sequentially, but in practice they don't or can't. As a result, there is limited scope to plan connections without a repeating "Taktfahrplan" timetable. Competitors may also need to be able to offer through advance fares for connections to be attractive to passengers.

For fares, passengers like choice, but not complexity or regret, which are both caused by choice. Low fares cut the scope for cross-subsidy or rent capture. The Government is currently reviewing fares, but how will it choose between devolution and consistency, or simplicity and revenue-maximisation?

Fares: competition or integration and inter-modalism?

At privatisation, there was an insistence that an end-to-end fare existed for any station-to-station “flow”. A lead operator, a franchisee, sets fares for a given flow, which must be accepted by all.

For flexible tickets, the lead operator sets the fare for interavailable seasons and open peak (actually valid on any train at any time) and off-peak fares. This is apportioned by agreement, or using the ORCATS allocation model, which led to “ORCATS raids” in which timetabling where services overlapped was driven by maximising not passenger revenue but the operator’s share of it. Other franchisees or open access operators may offer cheaper fares restricted to their own trains.

For less flexible tickets, any operator can sell “Advance” tickets. (Dick noted that their restricted validity might be clearer to passengers if they were called “One train” tickets.)

The European Commission “did not oppose” this arrangement in a judgement on 2 July 1997.

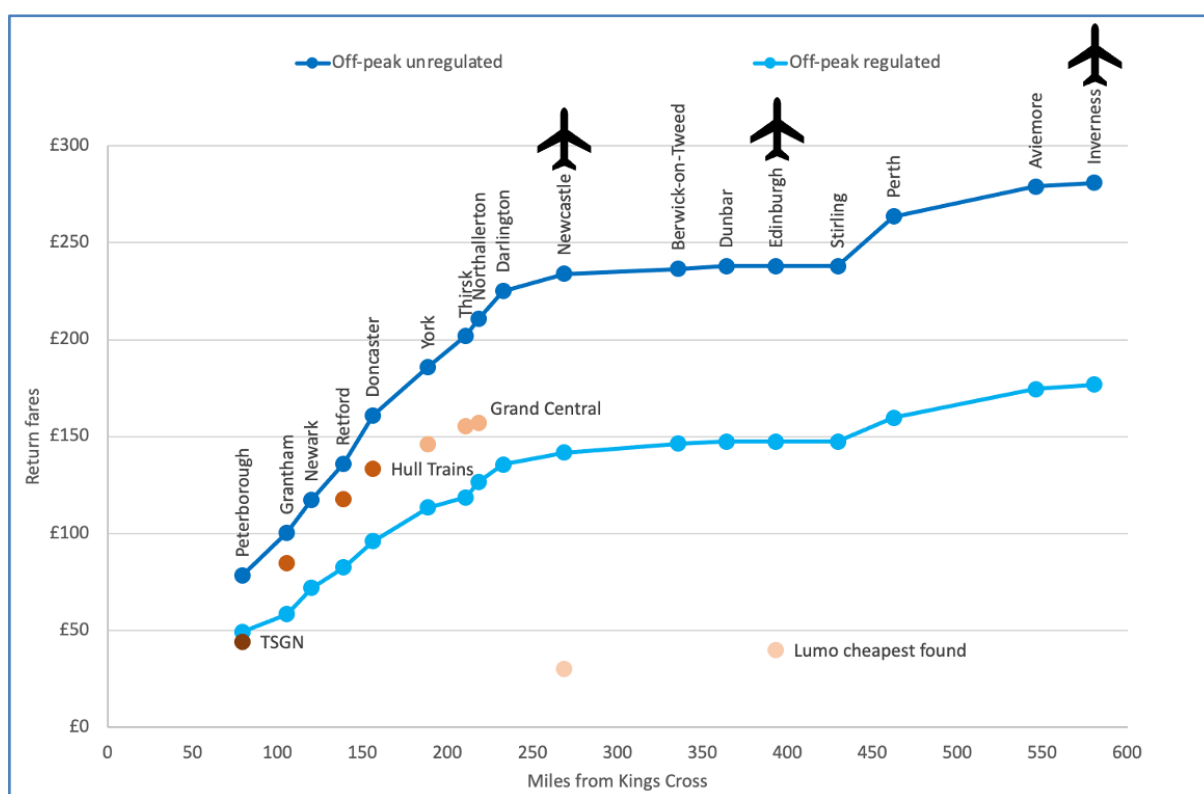
The aim had been both to retain end-to-end ticketing and to introduce price competition. However:

- For longer-distance travel where market entry is possible, unregulated peak fares rose to high levels and became unaffordable and hence irrelevant to most passengers (as did IATA’s interavailable “YY” air fares, ended in 2018).
- The end-to-end fare could often be undercut by combining shorter-distance fares, or “split ticketing”, which is now supported by many retailers, but confusing for passengers.
- Passengers and staff often find it hard to find the cheapest fare for any mix of route, passengers, Railcards, and flexibility either offered (“any afternoon train will do”) or required (“I must be able to return on any afternoon train”).

Fares: the effect of intermodal competition

A further complication on the ECML is the extent to which fares from London are constrained by air fares to Newcastle, Edinburgh, Inverness (and Aberdeen), as illustrated in Figure 7.

Figure 7: Air fares constrain rail fares on the ECML



Note: Hull Trains and Grand Central fares are off-peak and flexible but limited to their services. Lumo fares are the cheapest train-specific fares.

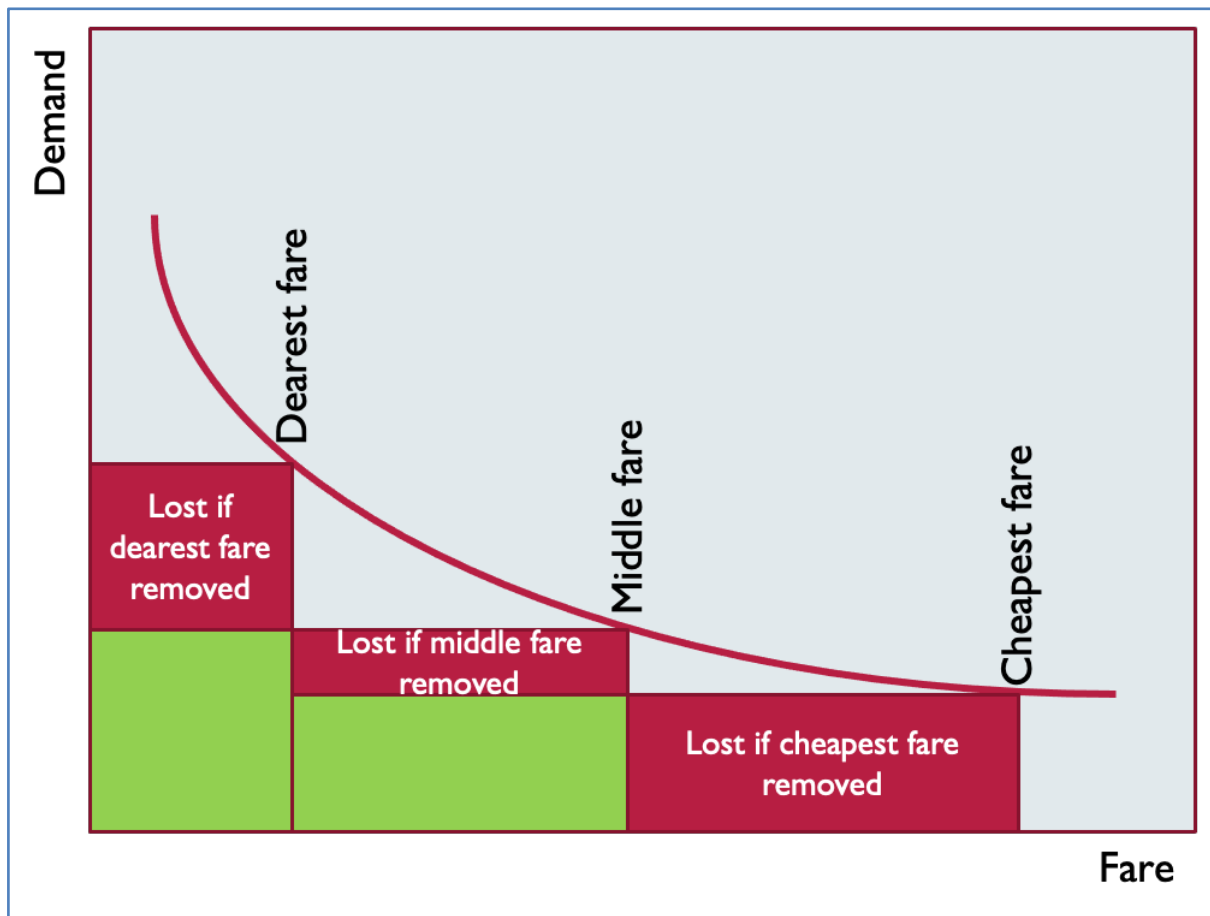
Rail fares from London rise linearly to around Newcastle, after which they appear to be constrained by air fares. Lumo does not compete with Hull Trains or Grand Central, and may see air, rather than the franchised operator (LNER), as the key price competitor.

Fares: simplification means less revenue

Williams-Shapps states that it will “simplify the current confusing mass of tickets” but does not explain how.

In practice, current fares represent nearly thirty years of refining market segmentation (different fares for different requirements) and yield management (allocating limited capacity to those who pay most) under dynamic competition between rail, coach and air operators. Figure 8 is a reminder that any simplification will probably cost money: removal any one of three fares targeting different market segments will mean less revenue.

Figure 8: simpler fares mean less revenue



Competition: is there room for more?

Privatisation has been a success, in that traffic volumes have grown. However, by 2018 the average number of trains over each section of route in Great Britain (shown in Figure 2 on page 23) had risen by around 50% since the 1980s.

Great Britain's combination of high intensity of use sustained over a large network size is an outlier. It now has the most intensively-used European network, except Switzerland and the Netherlands, both of which:

- operate an intensive repeating hourly timetable;
- are only the size of a large region in Great Britain; and
- have a national integrated and multimodal fare structure.

Competition: fair to both franchisees and open access?

Franchisees argue that they have a hard time compared with open access. Franchisees have more obligations and less

flexibility. Open access operators offer lower frequencies, for which they can only charge lower fares, but do not need to earn enough to pay franchise premia. Can there ever be a level playing field between two so different propositions?

ADIF has eliminated this issue by putting all packages on the same basis. Dick speculated on whether other routes could be carved out on model of ADIF package C or Lumo between London, Newcastle and Edinburgh. Glasgow is served less frequently and might not support rail competition. Manchester is served very frequently and is a short journey: would any other operator be interested? What about a London-Reading-Bristol Parkway-Cardiff-Swansea competitor?

Conclusions

In principle, Passenger Service Contract and open access services are very different in nature but, in practice, rising congestion means services are optimised collectively and have become complements.

The Department for Transport has added Harrogate, Lincoln and Middlesbrough to the main ECML franchise. Arguably ORR has added Hull, Sunderland and Bradford through open access and, if they withdrew, their services would probably be franchised. ORR has also added a low-frequency competitor, Lumo, to air and LNER.

Services compete partly on price, but fares are neither fully interavailable nor fully standalone. The future fares regime is yet to be defined, but simplification probably means less revenue.

There are no easy “dotted lines” dividing the network into simple, independent operations.

Capacity constraints make it difficult for local or regional bodies to specify their own services. Timetabling must be administered (“bureaucratic/dead hand of the state”), not market-driven.

It may be difficult to have a “policy” on competition or local partnerships: all will depend on local practicalities. However, if competition is desired, small franchises might compete on price and quality on at least some routes.

February's meeting revisited

Richard Davies spoke in February on the structure of the rail industry, and Dick reviewed points of agreement or apparent difference.

Richard noted that the context has changed since privatisation. Dick agreed that we now face different problems, which require different solutions.

Short, frequent trains may not be best use of infrastructure capacity, but the charging structure will not influence public authorities' decisions on adding services to franchises if the charges are not taken into account in their business cases.

The need for coordination rises as capacity is constrained. Promising "greater say to local leaders" may increase, not simplify, the range of conflicting aspirations for the use of the capacity. The timetabling process and the role of ORR may be changed, but optimising the use of capacity is likely to require a thorough, independent and transparent analysis.

Discussion

Julian Ware (Transport for London) commented that the cost-recovery performance of Crossrail, when complete, is expected to be very different to that of the Overground or TfL Rail. **Dick** noted that it will be interesting to see how Crossrail performs.

Gregory Marchant (Strategic Rail Authority (SRA), retired) asked why the ECML has been filled up so much, with a three-fold increase in traffic since privatisation, when open access was predicated on the assumption that there was spare capacity. **Dick** replied that the causes included both franchisees and specifiers adding services and the entry of new operators. It would be fascinating to identify the effect of each over time but, once any services have been introduced, it is politically difficult to remove them. **Gregory** added that a fear of services being cut at the time of privatisation had led to low marginal track access charges, leading to the opposite effect. **Dick** replied that marginal cost was the correct pricing basis, but no satisfactory method had been found of making such charges reflect rising scarcity value or opportunity cost. With hindsight, a higher variable charge might have helped manage demand.

Simon Temple (independent consultant) asked about simplifying fares, and in particular single leg pricing? **Dick** said that single leg pricing was common on competing coach and air services, and commercial and open access rail services elsewhere in Europe, and may be inevitable on rail in the long run. The change had been made in London, where Cheap Day Returns had been replaced by Peak and Off-peak Singles, but on long-distance services would upset well-refined pricing models and probably mean less revenue in the short term.

David van Rest asked if fast trains to London actually helped levelling up. The enthusiasm for them comes from local MPs and may reflect their preferences rather than their constituents' true interests. **Dick** agreed that it would be interesting to research and compare the preferences and priorities of decision-makers and passengers and the economic value of different types of service improvement. It would be brave, however, to say that Bradford should not want or prioritise direct services to London. A further problem in Great Britain is that local services often rely on central funding.

Mark Sullivan congratulated Dick for a very good talk and asked what was Residual EU Law (REUL)? **Dick** replied that this was the enormous volume of EU law incorporated into domestic law on leaving the EU. This could now be changed, but the government needed to decide what it wanted to change and to prioritise its use of limited parliamentary time. **Mark** suggested that a potential new low-frequency service package would be between South West and North East, potentially omitting Birmingham to save time and to avoid congestion. **Dick** noted the idea, and also that Birmingham and Manchester were major hubs for CrossCountry and TransPennine Express respectively.

Mark suggested a debate with Jonathan Tyler about timetables. **Dick** noted that rising congestion made timetabling harder and increasingly favoured a standard hourly plan, seen in the Swiss Taktfahrplan approach and being copied in Germany, rather than a pattern driven by vehicle utilisation, as was common in British Rail in the 1980s and typical in airlines and at airports.

Richard Davies (consultant) noted there is a fundamental difference between a planned timetable and an open access one. Many challenges have come from running both systems.

Williams/Shapps has a commitment to a new access policy, which will be the door to a Taktfahrplan. **Dick** acknowledged that, while the outcomes may converge, the processes and roles of stakeholders were different. A Taktfahrplan is built by consensus, while the ECML timetable arose from ORR's adjudication of competing and uncoordinated requests. A Taktfahrplan approach could, in theory, eliminate complaints from local interests, if they had been satisfied that the plan gave the greatest overall benefits, but it remains to be seen whether local partnerships will accept the need to compromise.

Richard also noted that ORR does not see its role as planning timetables, which is done by Network Rail. **Dick** agreed, and noted that ORR, despite extensive analysis and modelling, could grant future access rights which could not all be delivered in practice with the infrastructure and rolling stock which actually emerged, as in Manchester's May 2018 timetable. Whatever rights have been granted, honouring them through the construction of a workable and reliable timetable is a complex process, which neither ORR nor the courts can deliver.

Report by Peter Gordon

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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		Pages
Reports of meetings		
Why Travel?	<i>Matthew Dillon & Alexander Jan</i>	1-10
Rail industry structure: next steps "Have we finally arrived?"	<i>Richard Davies</i>	11-31
Rail industry contracting, competition and capacity: next steps	<i>Dick Dunmore</i>	32-51
TEG Committee 2022-2023		52

Details of meetings are provided on our website at
<http://www.transecongroup.org/meetings/>

