

increasingly successful Bernie Sanders campaign.

SAM DIAMOND  
Tucson, Arizona

The train takes the strain

The Labour Party does not go far enough in its plans to renationalise Britain's railways ("Gravy trains", October 3rd). As you noted, attaining rail renationalisation by allowing franchises to lapse will take more than a decade. Instead a new bill, a Railways Act 2020, should be passed by Parliament to terminate the franchises. The bill might consider re-establishing British Rail's passenger businesses, which were fragmented into 25 separate entities by privatisation.

Among them was Intercity, which operated high-speed trains, and Network South East, London's commuter service. Policymakers have been reluctant to acknowledge the cost to the taxpayer and the British economy of rail privatisation. That amnesia ignores the remarkable performance of these two businesses: in 1993-94, both made an operating profit and did not require a penny of public subsidy.

ROGER LEWIS  
Campaign to Bring Back British Rail  
London

Why does *The Economist* persist in repeating the view that Britain's rail privatisation was "in many ways, flawed" because the splitting of tracks and trains "led to inefficiencies"? There is never a perfect way to privatise a complex, natural monopoly. New Zealand and Estonia privatised their networks without splitting tracks and trains. The result was disinvestment in infrastructure. With vertical separation, Britain has not had this problem. With competition to operate train services, ridership has doubled. What measure could possibly be better? Britain now arguably has the most frequent, modern and reliable trains in Europe, maybe the world. On average, fares have remained constant, although the range is much wider.

The problem is not with the train companies but with the monolith of Network Rail. It also needs to be broken up to create, if not full competition, at least opportunities for diversity and innovation.

MICHAEL SCHABAS  
Partner  
First Class Partnerships  
London

**The betting on Corbyn**

Pagehot thinks that Jeremy Corbyn will eventually be replaced as Labour leader, but until then the party "is taking a long luxurious holiday from the chill winds of electoral reality" (October 3rd). Yet in the same issue you say that "the old party machines are imploding, and political entrepreneurs have the wherewithal to take over old parties...Anti-capitalism is once



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# TWENTY YEAR PARTIAL PRIVATISATION

**MICHAEL SCHABAS**, partner at FCP Rail Consultants, suggested some possible changes to the industry model in a discussion with the Railway Study Association

I came to the British rail industry as a bit of an outsider. I was born in Toronto, and spent my early career building metros in Vancouver and Honolulu. I moved to London in 1988 to help the Canary Wharf developers secure the Jubilee Line Extension (JLE), and fix the Docklands Light Railway (DLR).

I then stayed on as a consultant, working for the London Borough of Hackney and others to promote the East London Line extensions, which eventually became part of the London Overground. I also developed the idea of using St Pancras as

the terminus for High Speed 1 for the London Borough of Newham and the King's Cross residents. British Rail, which been planning a low level station at King's Cross, brought me into the team and eventually adopted the idea.

## 1992 ELECTION

In the 1992 General Election, John Major was elected with a commitment to privatise the railways. I had seen the benefits of airline deregulation in the US. As a consultant I was thrilled at the prospect of dozens of new clients. But I still had little

understanding of how the British railway system really worked.

My first encounter with the new industry structure was the 1994 West Coast main line study. A few years earlier, I had put together a team to upgrade the DLR. That work was coming to an end and I persuaded Railtrack that the same skills and technology, including moving block signalling, were the best hope of rebuilding a dilapidated but intensively used railway.

But Railtrack had little idea what it wanted. The project director, Gil Howarth, had built nuclear

Early years of privatisation: Michael Schabas was part of the GB Railways team that operated the Anglia Railways franchise, which included the London-Norwich inter-city route and local services in Norfolk and Suffolk. In 2004, Anglia was merged with the Great Eastern and West Anglia routes as a single, larger franchise. On 15 May 2004, after the transfer but still bearing Anglia Railways colours, No 86230 passes Brantham, Suffolk with the 11.00 Norwich-Liverpool Street service. Antony Guppy



# S OF ATION

facilities but, like me, he had never run a railway. While we knew little about signal boxes, track circuits and possessions, we did know that nobody, anywhere in the world, had rebuilt an electrified four-track mixed traffic railway.

The prospects were daunting. The line was full, while the equipment was long past its sell-by date. On the DLR, the SELTRAC moving block system gave much more flexibility and capacity; could it not do the same on a main line railway?

## NEW TECHNOLOGY

European Train Control System (ETCS) wasn't available in 1995, but digital mobile phones were, just, and a committee in Brussels was working on the principles of GSM-R (Global System for Mobile



Modernised West Coast: in new 'Virgin Trains Arrive Awesome' branding, No 390155 passes Linlade on 27 June 2015 forming 1B02, the 05.45 Wolverhampton to London Euston. Ken Brunt

Communications – Railway). GPS had been used in the first Gulf War, so the pieces seemed to be there.

We suggested that Railtrack should carry out competitive development, awarding at least two contracts for the control system. This would increase the chances that someone would actually make it work.

Alas, Railtrack skipped this and awarded a single contract. This was abandoned a few months later, switching to conventional technology, but with no clear idea how this could be implemented. But that is another story.

## VERTICAL INTEGRATION?

Before starting the West Coast study, Gil Howarth had asked how Railtrack could know what the new train companies would want. My response was that we would 'think like operators', but in truth we didn't have a clue.

Indeed, the whole idea of a multi-user, vertically separated railway was entirely alien to someone like me whose experience was in metro systems, where there is usually only a single type of train. The track and technology were inter-dependent, and any line upgrade would need an integrated solution. How could this be shared between multiple companies?

Early on, I attended a meeting with a Department for Transport (DfT) official, whom we attempted to persuade to allow a degree of vertical integration. He reiterated that vertical separation was the Holy Grail to the Treasury. It had worked in electricity privatisation, so why not in rail? It only needed smart economists, accountants and lawyers to structure the contracts and performance regimes. Only this radical break up would bring new capital, new people and new ideas into the industry.

The official curtly pointed out that I had wasted a valuable half hour of his time. But Gil Howarth's question about operators had got me thinking. While looking for new clients, I found bus companies and airlines reluctant to enter the train business. When the US airlines were deregulated, new operators had entered the field. Maybe I could start my own train company?

## FRANCHISING

Still with little idea how privatisation would work, I teamed up with Max Steinkopf and Jeremy Long, who knew about running companies, and formed GB Railways. Jim Morgan, who actually knows how to run trains, joined a bit later.

I wrote a letter to the Franchising Director saying that we were interested, and a few weeks later a van pulled up at my home with a load of documents for the first three franchise bids.

Initially, things went very well indeed. Bidders like Prism Rail, National Express, Virgin, M40 Trains and my own GB Railways won franchises with ambitious commitments to introduce new rolling stock and to greatly increase service frequencies. The bids assumed rapid ridership growth, which in most cases was actually exceeded.

I would challenge the myth that privatisation was 'botched' because the structure assumed a declining industry. Certainly, decline was not a view that winning franchise bidders held.

## MARKET CHOICE

During the West Coast study, we needed to define a specification for the upgrade. How fast should the trains run, how frequently, should they tilt etc? We couldn't find an objective way to do this. It was impossible to forecast traffic and revenue with great confidence. Train builders would not give firm prices unless you were really going to place an order, and Liverpool was bound to complain if it got fewer or slower trains than Manchester.

Together with Chris Stokes at the Office of Passenger Rail Franchising (OPRAF), we came up with the idea of letting the market decide. Railtrack would offer a range of price upgrade options, and the franchise bidders could choose. Thus was conceived Passenger Upgrade 1 (PUG1). Railtrack agreed, blindly taking on the risk of delivering a complex, multi-billion pound project for a fixed price.

A few months later, I was awestruck when Virgin won the West Coast franchise with a commitment to pursue not just all of PUG1, but further enhancements too with PUG2. The money-losing franchise would switch into profit, paying large premiums to the Government.

## PROBLEMS ARISE

Then things started to go wrong. Railtrack sold too many paths on the network, not realising the reliability problems that would emerge. The Labour Transport Secretary John Prescott seemed to enjoy complaining about the rail industry, although he had no solution of his own to offer other than to expand OPRAF into a bloated bureaucracy, the Strategic Rail Authority.





This filled a void that Railtrack could have occupied, had it been more pro-active. Railtrack did not respond well to meddling by the SRA. And it gradually realised it could not deliver the West Coast upgrade for anything like the expected price. Mr Prescott had forgotten the aphorism 'be careful for what you wish'.

Railtrack went bankrupt. Labour winced at the thought of actually being responsible for the railway and, after months of turmoil, created Network Rail as a way to avoid taking billions of pounds of debt back onto the Government's books. Network Rail gradually rebuilt the engineering skills to maintain the network, but costs skyrocketed.

#### BRITAIN'S RAILWAYS IN 2015

After 20 years of partial privatisation, the British railway industry is in very good shape. It has achieved by far the highest growth in traffic of any railway in Western Europe. It is also one of the safest.

Customer satisfaction is high, although expectations keep rising. There are still strikes, but in general staff now work more efficiently and are better rewarded. Railways in southern England are now run largely from passenger fares, not taxes, although it is a different story in the regions. The Government now seems happy to provide capital funding for Crossrail, big electrification schemes, the Inter-city Express Programme and High Speed 2, with serious talk of Crossrail 2 and East West Rail.

#### FARES

Historical comparisons are difficult, because the industry has changed so much. Figures 1-4 show operating and financial data (at 2013 prices) for the nine Train Operating Companies (TOCs) whose franchise boundaries have not changed since privatisation. Figures for 1994 are from the original franchise sale documents, adjusted for inflation; 2013 figures are from the Office of Rail

and Road (ORR). Note that the 1994 figures for Great Western include Thames Trains.

As Figure 1 shows, passenger income has, roundly, doubled. Figure 2 indicates that fares per passenger km have overall remained constant, but there is variation between the train operating companies (TOCs). The largest increase is on Virgin Trains (West Coast), about 10%, while the service has obviously improved much more than that, with faster, more frequent trains.

The range of fares is also much wider, with higher peak and first class fares, but also many more cheap tickets. I recently did work for the World Bank, trying to persuade China Railways to adopt British-style pricing. Officials were incredulous when I explained that the lowest fares per kilometre on Britain's fast trains are actually well below the cheapest fares on Chinese high speed trains.

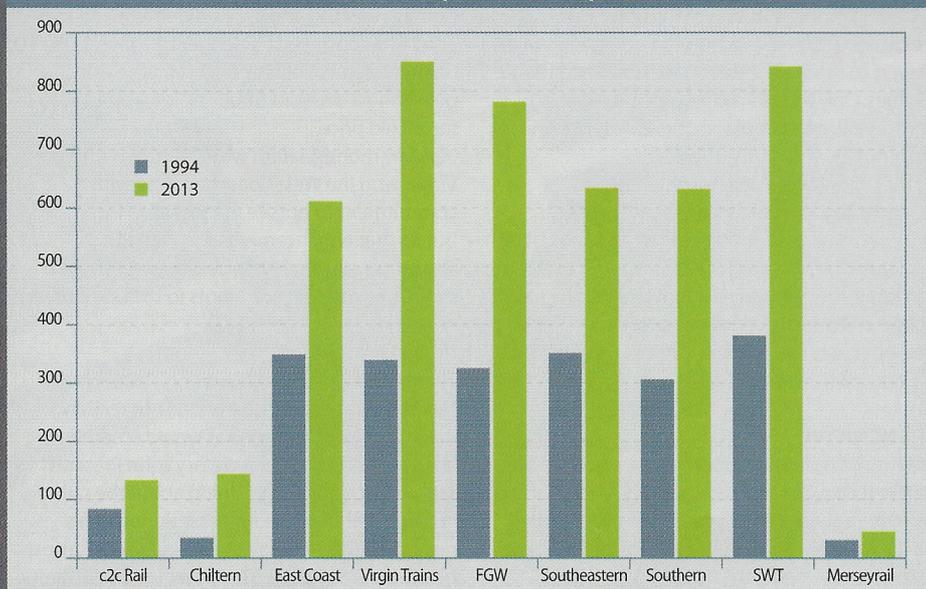
#### OPERATING COSTS

Figure 3 shows that, overall, operating costs per train kilometre have hardly changed. This puzzles some economists, who expect costs to fall in a privatised industry, especially where traffic is growing and there are economies of scale. I have been critical before of the McNulty review, which claimed that costs were 40% higher in Britain than in Western Europe (p54, May 2012 issue).

McNulty's claim was made on the basis of dubious data and analysis, but missed a more important point. The cost of providing a train service depends partly on operator efficiency, but also on the service level that is offered. The price of coffee has gone up in central London over the last decade, but the quality also seems to have improved. Rising unit costs may be perfectly reasonable if customers are demanding, and getting, better quality.

Figure 3 shows that on some TOCs costs per train km have gone up, while on others they have gone down. Efficiencies have been offset by some pretty big improvements in quality, in several dimensions. Somehow, c2c,

**FIGURE 1: PASSENGER INCOME (£ MILLION) AT 2013 PRICES**





Not a fare comparison: why are regulated fares higher on the East Coast main line than on comparable West Coast routes? Resplendent in Battle of Britain Memorial Flight Livery, No 91110 catches the setting sun at Sandy, Bedfordshire as it heads a Virgin Trains East Coast service from London King's Cross to Leeds on 10 June 2015. Fraser Pithie

Virgin (West Coast) and Southern have replaced fleets of old trains with new, faster, air-conditioned stock while reducing the cost per train km. On Virgin, services that used to run every hour now run every 20 minutes.

That the cost per train km has actually fallen can be explained, in part, by running more and often shorter trains. This spreads fixed costs over more train km. Whatever the explanation, it's still a good outcome for the industry.

Figure 4 (overleaf) shows that the cost per passenger km has fallen on most TOCs, but not by very much. My view is that TOCs are not true monopolists, and it makes sense to operate more frequent, potentially shorter trains, up to the point that marginal cost equals marginal revenue. The typical British inter-city line will have two or even three trains per hour. In Germany or France, hourly services are the norm, although Deutsche Bahn is now moving to half-hourly services.

#### A NEW INDUSTRY MODEL?

I was asked by the Railway Study Association to suggest 'a new industry model'.

I recall asking someone from the Central Electricity Generating Board whether, before that industry was privatised, it had been run by engineers or economists. I was told that actually they took turns, swapping control every few years. It seems it worked, although perhaps not very well. The point is, no industry structure is perfect. I believe in the motto 'if it ain't broke, don't fix it'. The UK rail industry structure is certainly not broken. But there are three areas where I think changes might bring further improvement.

#### BREAK UP NETWORK RAIL

There is a wide perception that Network Rail is not a paragon of efficiency. Implementation of new technology seems to take forever, and everything seems to cost far too much. Of course, maintaining and upgrading a live railway is neither cheap nor easy. But the problem is,

there is no way of knowing whether Network Rail could do better, because there is nothing with which to compare it. And it cannot be easy to innovate within a large monopoly enterprise.

I believe that Network Rail should be broken up into smaller pieces to enable diversity and innovation and also peer comparisons. It would not be too difficult to break off some pieces. Probably 90% of train services in East Anglia do not operate beyond the region; the third rail network south of London and the network in Scotland are similar. Each of these regions would be comparable in size with Belgium or the Netherlands, which seem to be large enough to sustain their own Network Rail type organisations.

Of course, there would still be some central coordinating functions, such as timetable management. But the vast bulk of activities and expenditure, including maintenance and operations, would be controlled locally.

These 'baby Network Rails' could be offered as concessions, or even sold outright. The ORR should be able to regulate them better. Besides

being smaller, there would be the ability to make comparisons, and there would perhaps be more innovation as ideas moved between the different regional companies. Indeed, sectorisation of British Rail in the late 1980s had much the same objective.

#### AVERAGE FARE REGULATION

McNulty correctly identified problems with regulation, especially the 'false peaks' created by savers (now called off-peak, flexible) tickets.

The principle of regulating by the saver fare is elegant. I describe this to foreign visitors as the fare that you pay if you need to visit your mum in hospital. It is available at the last minute and it is flexible, so you can stay for as long as she wants. But you can't go first thing in the morning and you might need to stay for tea.

On most other railways, the highest fare is regulated. Although simpler to explain, this usually means the highest fare is that much lower, raising less money for the railways, and making less room for cheap discount fares.

FIGURE 2: AVERAGE FARE PER PASSENGER KM (£, AT 2013 PRICES)

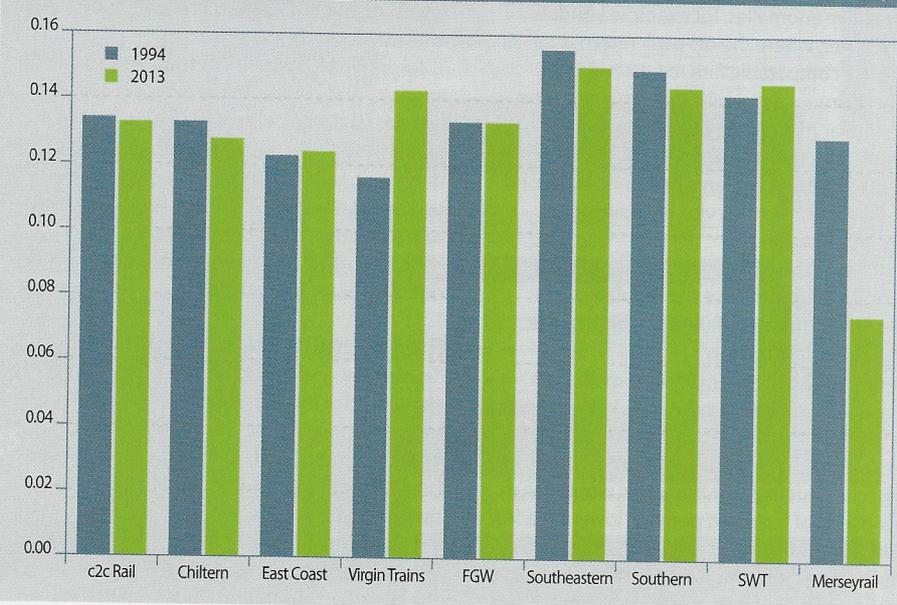
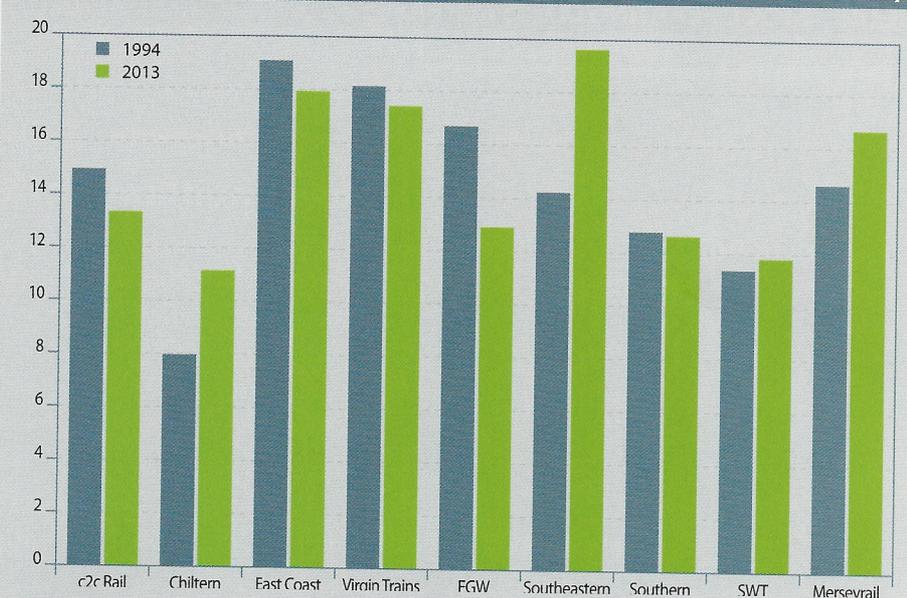


FIGURE 3: TOC OPERATING COSTS PER TRAIN KM (£, AT 2013 PRICES)



Includes rolling stock leases but excludes Network Rail charges



DfT bearing revenue risk: the Thameslink, Southern & Great Northern franchise will see major changes over the coming years. Unit No 319005 heads a northbound Thameslink service through Farringdon on 18 February 2015. Paul Bigland

Unfortunately, there has been no real review of the level of regulated fares since privatisation. So we have anomalies; for example London – Manchester, where the off-peak return is £81.60, while the comparable fare to Leeds is £103.

The journeys are similar in length and time, with similar market size and competition. It seems that in 1995, when the railways were privatised, East Coast fares had been increased to reflect the recent service improvements and electrification.

But when the West Coast was upgraded, nobody thought to raise the regulated fares. Either the Leeds fare is too high or the Manchester fare too low.

With the rise in real incomes over the last 20 years, the optimum price should have gone up. The Government should review off-peak fares and adjust them to a level that maximises net social benefit. Most likely, this would mean raising a lot of fares and perhaps lowering a few.

On commuter lines, the season ticket fare is regulated because this is where the railways have market power. But commuting patterns and fare collection technology have evolved.

Oyster capping shows how different pricing strategies can increase both ridership and revenues, but regulated train operators have little freedom to experiment.

I wonder if it might be better to regulate both inter-city and commuter fares by the average fare per passenger kilometre. Essentially, the operators can charge as much or as little as they want, but if they charge more to some customers, they would need to work harder to sell more cheap tickets to others.

This could encourage operators to maximise ridership as well as revenues.

#### HOW TO TRANSFER TRAFFIC RISK

Transferring traffic risk has been a recurring challenge for the Government. The most optimistic forecast tends to win the franchise. While operators have capital at risk, it is never politically attractive for the Government to terminate a franchise.

How many times have critics claimed that the East Coast franchise 'failed'; when for the travelling public and Government it has performed better and better?

For the Thameslink franchise, the Department for Transport (DfT) decided not to try to transfer traffic risk at all. The operator will certainly have its hands full managing the commissioning of new trains and infrastructure, and the same model seems to have worked on London Overground.

But the Overground is marketed by Transport for London as part of a larger network; DfT will be paying Govia Thameslink Railway to market its services. How creative will it be? Marketing involves risks, but who will take them?

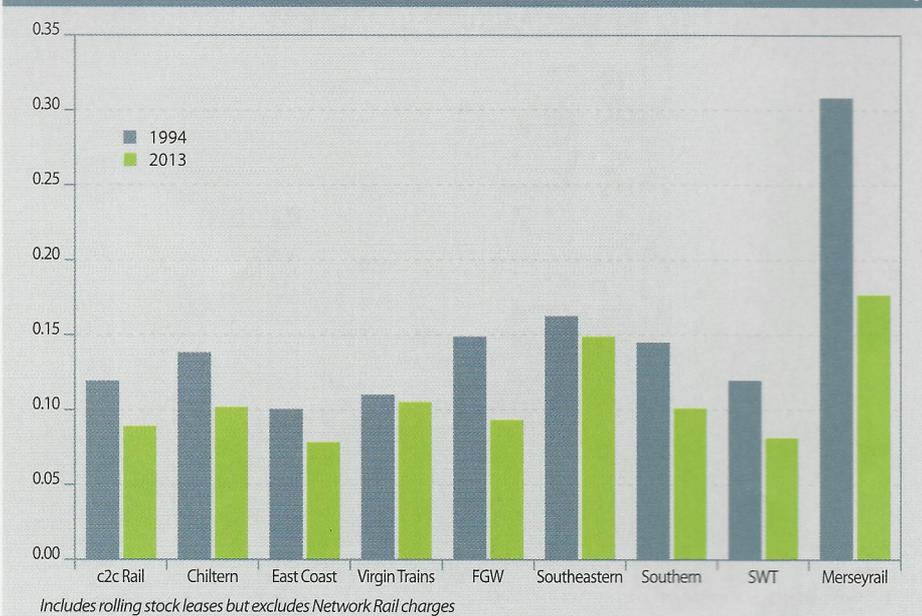
For the recent East Coast franchise, DfT transferred traffic risk, but with a mechanism to reflect expected changes in Gross Domestic Product (GDP). The mechanism can't be perfect, because the relationship isn't perfectly understood. The risk is moderated, perhaps, but remains. I wonder if this is really the best way.

Investors in most other industries take GDP risk. Why is it so important to unbundle it from rail franchises? The problem is that, in the short term, GDP risk can wipe out all the profits of a limited term franchise. In a seven year or even a 15 year franchise, the performance bond can never be large enough to stop an operator from walking away from an overly ambitious revenue projection.

I suggest a different deal structure. Why not set an annual rent, well below the annual premium that is anticipated? The franchise could then be sold to the bidder offering to pay the largest up-front lump sum. I understand this is how many office leases are 'sold'. Bidders would take a view of the profits they expect to make, and discount them back to a single initial payment. Operators might team up with infrastructure funds to raise the money.

So that's it. Not a new model, but three changes within the existing structure. John Glover

FIGURE 4: TOC OPERATING COSTS PER PASSENGER KM (£ AT 2013 PRICES)



# Benchmarking for dummies



Far from lagging behind their Continental peers, as McNulty said, are British railways actually well up in the efficiency stakes? The answer depends on the questions you pose, argues Michael Schabas

**R**eflecting the fiscal pressures of the times, there has been a great deal of talk recently about improving 'Value for Money' in the rail industry. Government ministers and regulators have latched onto the conclusion of the McNulty report, that GB Rail costs are 20% to 40% higher than European peers, and there is an 'efficiency gap' of 40%.

They are also unhappy that, despite privatisation, unit costs have not fallen since the 1990s. And they have embraced McNulty's recommendation 'the industry should be aiming to achieve a 30% reduction in unit costs (ie costs per passenger km) by 2018/19'.

McNulty's conclusions suit the Government, which wants to find ways to cut spending, while blaming its predecessors for being

profligate. And there is a growing consensus (which I share) supporting McNulty's main recommendation, that Network Rail should be broken up into independent regional units, potentially semi-integrated with train operators.

However, McNulty's conclusion that GB Rail costs are higher is not supported by reliable evidence. Moreover, the unit costs measure is not evidence of failure, and indeed rising costs, provided they are matched by rising revenues, could well be a sign of success. There is plenty of room to improve GB Rail, however it is difficult to believe that it less 'efficient' than wholly state-owned French and Swiss rivals. After two (and in some cases three) rounds of competitive franchising, and with the fastest passenger growth of any country in Europe, the opposite seems more likely to be true.

Indeed, the only real evidence that McNulty shows of European railways being more efficient, is the experience of small German train operating companies (TOCs), where competitive tendering by regional authorities has shown savings of about 20% in comparison with Deutsche Bahn. What McNulty doesn't pick up is that the German TOCs are all much smaller, typically a tenth the size of ours.

A decade after I argued that it was time to break up Railtrack, it is now being accepted as the way forward. Maybe it is also time to end a decade of trying to combine franchises, and accept that it is smaller franchises (think Chiltern, c2c, Merseyrail, Anglia) that are best at delivering improved services and managing costs. This would complement the Government's 'localism' agenda.



Out in front? Train from London stands alongside French domestic trains at Gare du Nord. Keith Fender

Fewer larger franchises may be easier for Whitehall and ministers to understand, but more, smaller franchises (Germany has over 100) will lower the barriers to new bidders, encourage innovation (which McNulty notes is now lacking) and probably also give better value. And, by the way, keep the industry from being consolidated into a handful of foreign, state-owned operators.

### Cold numbers

McNulty clearly wanted quantitative evidence to support his recommendations. There is an old saying that 'if you can't measure it, you can't manage it'. And it is convenient when simple numbers prove something you already believe to be true.

But McNulty's use of benchmarking is deeply flawed. His figures are based on a single

benchmarking study by Civity, a German consulting firm. They do not actually prove that GB Rail is inefficient, indeed, on deeper examination, they can equally be used to show the opposite.

McNulty focuses on cost per passenger kilometre as his measure of value for money, ignoring the very different values of travel to different passengers. All other things being equal, it is better to do the same with less, but in the rail industry all other things are never equal. A rail industry that blindly pursues cost reduction is likely to attract fewer passengers, require larger subsidies, and spiral into rapid decline.

Benchmarking is a fancy name used by consultants for doing what managers have always done with numbers. How much does your business produce? How long does it take?

And how much does it cost, in comparison with your peers or competitors?

McNulty is new to the rail industry (his background is in aviation). Railways generate masses of statistics, and they all have a story to tell. But each railway is the product of unique geographic and historical circumstances; no two are alike. Benchmarking really only works when you are comparing apples and apples. Benchmarking railways can be very misleading if one does not look behind the numbers. It is easy to prove anything – or nothing.

### Mixed fruit

McNulty's first problem is that he benchmarked mostly at a national level. This assumes, implicitly, that GB Rail, and the continental systems Civity looked at are each, in aggregate, more or less comparable. In fact, instead of apples, or even oranges, each country's railway is a basket of mixed fruit.

Benchmarking would be a lot easier if each railway served a single route, for a single type of traffic, with a single type of rolling stock, and with no interaction or overlap with any other railway. Alas this is not the real world.

Civity compared the entire GB Rail system (19 franchised train operating companies [TOCs] or 'GBR19'), and data subsets for inter-city (IC), London & the Southeast (LSE), and regional TOCs (Civity uses the German name 'Regio'), against:

- SJ (Swedish Railways), with a mix of higher-speed inter-city services and Stockholm suburban services. Local and regional services are now mostly franchised to competing operators, and not included in the SJ data.
- SNCF (French Railways), which operates mostly long distance high speed trains and intensive commuter services around Paris. Local services are apparently included, although compared with Britain these are few and far between.
- NS (Dutch Railways), which is essentially a large commuter operation. The Randstad is the size of southern England. Longer distance services are mostly operated by Thalys, NS Highspeed, or DB, and so are not included in the NS data.
- SBB (Swiss Railways), like NS, is dominated by suburban and middle distance Intercity services. Most local and regional services are not included in the SBB data.

To the lay person who is not an expert in railways, all five railways may look similar. But the characteristics of each type of service vary widely.

French high speed trains run faster, but also generally have further to go, because France is a bigger country.

London commuters mostly like to live in villages beyond the green belt; continentals are more likely to live in tower blocks, perhaps in a 1970s new town.

French, Swiss, and Dutch railways can all use double-deck trains, with 30% more capacity and thus lower costs per passenger. London commuter trains need to be smaller, but they are also usually more frequent, run further out (London uniquely has a statutory green belt) and serve many more small stations. It costs

more to serve English suburbs, but people also seem to prefer them. However much they may groan about high fares and crowded trains, the high price of houses in places like Woking and Sevenoaks is proof that the price and quality of commuter services is one commuters accept.

### Normalisation

Civity 'normalised' the international data for exchange rates, degrees of electrification, multiple tracks, travel speeds and distances between stops. How they did this is not disclosed in any detail, even in the consultancy's full report. For example:

- How do you reflect different train sizes, which may be a function of physical constraints (double-deck trains will never fit under British bridges) or a response to market demand?

- How do you adjust for train frequency, and demand peaking by time of day or direction?
- How do you apportion joint costs between operators with overlapping geographies? How do you match data on Network Rail's nine Routes to the 25+ TOCs?
- How do you apportion shared assets, for example depots, stations, and even locomotives, which may be used by more than one operator?
- How do you treat 'lumpy' capital charges, for example for rolling stock? How do you treat leasing costs as compared to purchasing? What about debts that have been written off?
- How do you distinguish renewals from enhancements? Different railways apply different policies when preparing their accounts

- Is reliable cost data even available, reflecting all costs and subsidies including taxes, pension liabilities etc?
  - What value do you place upon operating performance and service quality, both of which come at a price?
- The list could go on and on. Anyone who has ever tried benchmarking railways knows why this is a 'science' best done by consenting adults behind closed doors, preferably in the dark. Sceptics say that 'normalising' is really just a fancy word for 'we multiplied and divided different numbers together until we got an answer we liked'.

### Getting the 'right' conclusion

Of course, one can make 'guesstimates', informed or otherwise. McNulty clearly wanted Civity to infer some conclusions, and the company obliged. Whether the conclusions are accurate and useful, or misleading and potentially even dangerous, is another matter. Let's consider just a few.

Let's start with the contention 'GB rail train utilisation is significantly lower than comparator countries'. Higher utilisation is more efficient, right? As shown in Figure 1, taken from McNulty's report, GB Rail's average load of 107 per train, is significantly lower than the other national operators. Looks inefficient, doesn't it? However, if one digs into the Civity report, available on the Office of Rail Regulation (ORR) website, one finds a slightly different figure (Fig 2), with loadings also for GB 'Regio', inter-city and LSE. This tells a somewhat different story.

Loads on GB Regional are indeed very low, on average 62 passengers per train. But loads on GB inter-city (138 passengers) and LSE (119 passengers) are pretty similar to SBB at 122 per train, and not a lot lower than NS and SJ with 137 and 140 each.

GB Rail looks 'bad' because the data for GB Rail includes regional services, which are (conveniently) mostly excluded from the SJ data (because they are run by other operators), SBB (because they are mostly narrow gauge or other operators), and NS (because the country is so small there hardly are any, and the few there are have been tendered to other operators). McNulty may have been seduced by Civity's misleading strapline 'GB train utilisation is at the low end of the sample'.

### Read the label

It is easy to be blinded by numbers, and forget to ask whether a chart is even labelled correctly. Normally, 'utilisation' is 'capacity used' as a proportion of 'capacity provided' - right? While the side notes do acknowledge that SNCF's trains are very large, here there is an implicit assumption that all trains are the same size. Which, of course, they aren't.

The chart label is incorrect - it should be 'Average train loads'. Why didn't Civity present data on load factors? This would certainly give a better indicator of 'utilisation'.

### Frequency attracts

But what does average load per train tell us about 'Value for Money', anyway? Smart

Figure 1: GB rail train utilisation is significantly lower than comparator countries

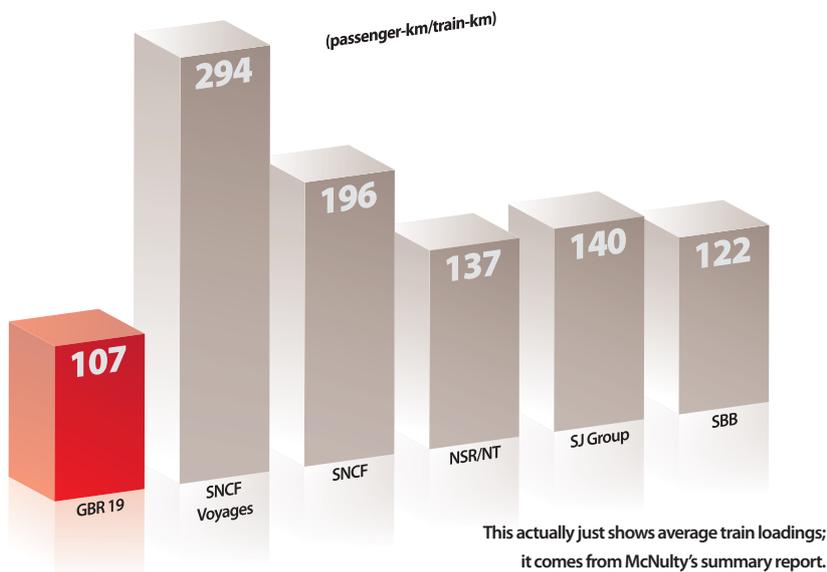
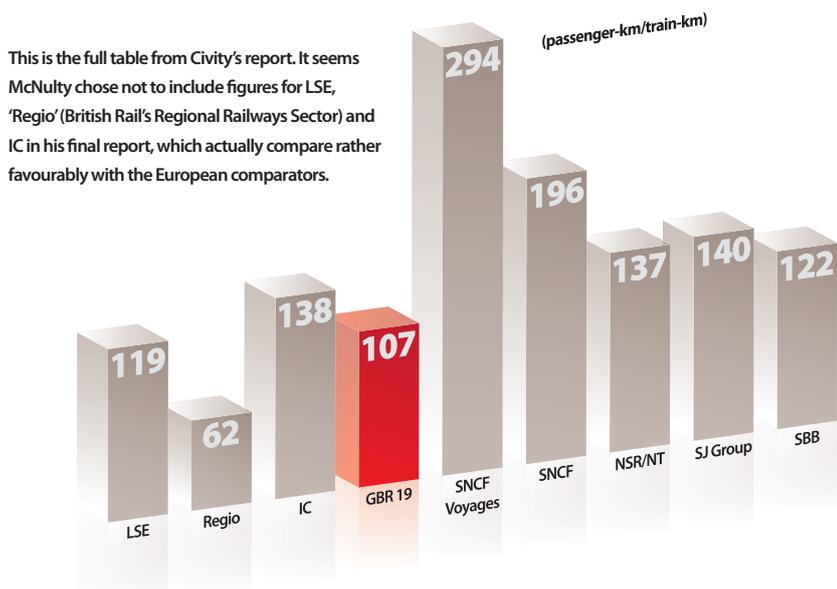


Figure 2: The GB's train utilisation is at the lower end of the sample



- Average utilisation of trains is particularly high in France.
- This is very much driven by SNCF's high speed system which is accounting for a large share of the passenger transport supply. These trains have a large capacity (~500 seats), fairly long sets (~240m), partly use double stack coaches (TGC Duplex) paired with a high demand.
- Utilisation of TGVs was 78% in 2007.



Dutch doubledecker: VIRM EMUs at Rotterdam Centraal, 11 November 2011. Keith Fender

operators use big trains on busy long distance routes and small trains on low-density regional routes. SNCF Voyages achieves the highest loads, because French cities tend to be further apart – inter-city coaches are banned, and there are tolls on the motorway. So passengers are happy with services running hourly.

UK operators have known since the 1980s that smaller, more frequent trains can attract more passengers, with higher revenues more than offsetting any increase in costs. My own company, GB Railways, did this on the London – Norwich route. We converted an hourly service with electrified 10-car loco-hauled trains to a

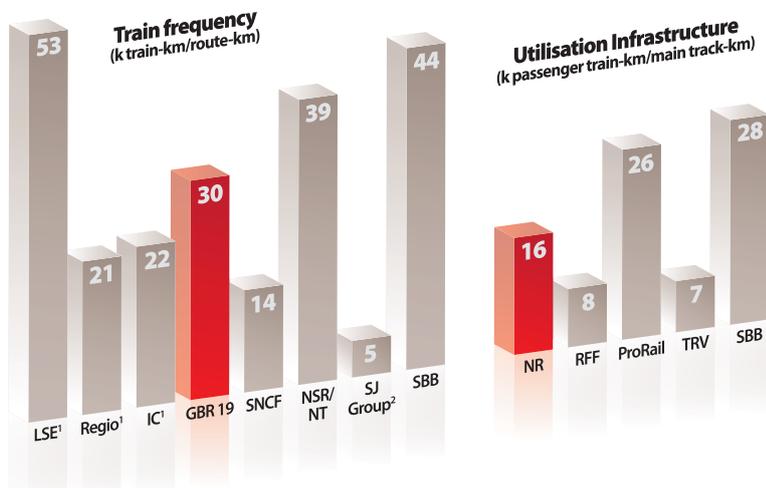
half-hourly service with a mix including shorter DMUs. Additional revenues more than paid the extra costs.

Virgin increased services to three trains per hour because it makes more money, and requires less subsidy. But it surely also lowers average loads. Reverting to an hourly service wouldn't increase 'Value for Money'.

Lower average train loads might just as likely be a good thing, not a bad one. Somebody on McNulty's advisory panel should have explained this to him.

### Figure 3: Switzerland and the Netherlands use their infrastructure more intensively than UK

This is extracted from Civity's report. NR is Network Rail; RFF, ProRail and TRV are the network operators in France, the Netherlands and Sweden. Note that London & Southeast (LSE) actually has the most intensive operation. The Dutch and Swiss networks are also pretty intensively used, but that is because they serve small, densely populated countries and don't have the long distance routes or remote regional services that bring down the GBR average.



1 Route-km calculated as sum of route lengths of the individual TOCs, normalised to the real total route-km. Approximate values only, therefore.  
 2 Train km of all operators would lead to a value of 9 k train-km/route-km.

#### Use of infrastructure

'Switzerland and the Netherlands use their infrastructure more intensively than UK.' Well, that's another catchy strapline, but looking at the numbers (Fig 3) the real story is a bit different.

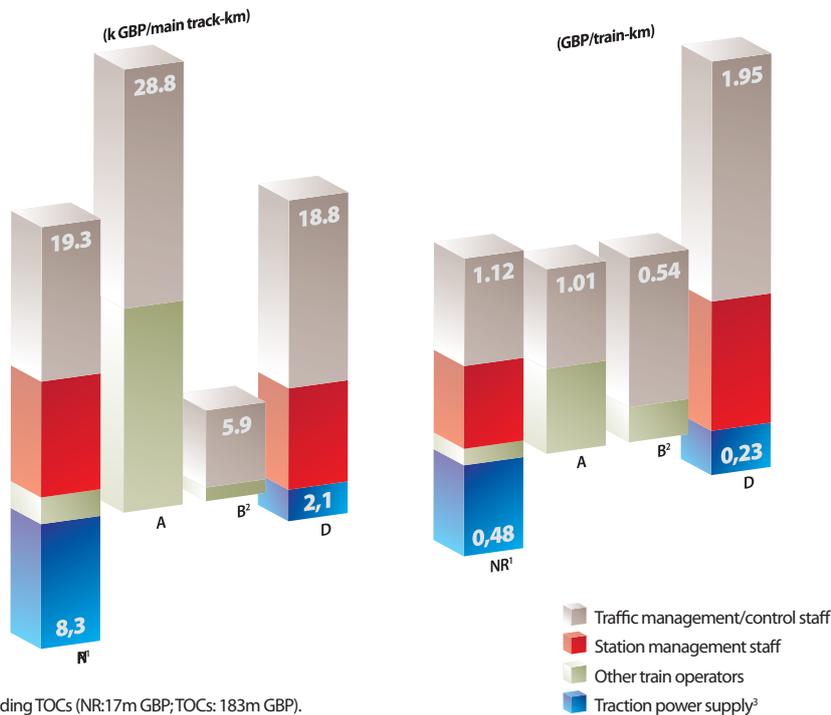
While again GB Rail looks 'bad' in aggregate, it seems the London & Southeast routes are used more intensively than the Swiss or Dutch systems. Where traffic density supports it, GB Rail can operate trains as intensively, indeed more intensively, than the Europeans. It's just that the GB system is much larger, because Britain is a larger country, and also includes lower-density inter-city and regional lines which bring down the average.

SNCF and SJ look even less 'efficient', in this respect, because they serve even larger countries.

Exclude Wales, Scotland, and northern England, and what is left of GBR becomes a more intensive user of infrastructure than the comparators. Without actually changing a thing. The caption could have been 'Network Rail has some of the most intensively used infrastructure

## Figure 4: GB's costs for network operations are the second highest

Network Rail actually looks pretty good in comparison with operators A and D. Operator B doesn't seem to have any stations. And Operator C seems to have disappeared completely!



1 Including TOCs (NR:17m GBP; TOCs: 183m GBP).

2 Excluding station management.

3 Traction power not in every country provided by infra manager or data not available

in the world. It would have been equally true.

### High costs?

'GB's costs for network operations are the second highest'. Well, it depends whether you are one of those people who thinks a cup is half empty or half full. Civity only presents data for four operators (Fig 4), and the comparators are, for some reason, now only identified by code letter.

NR (Network Rail) costs are three times higher than operator 'B', but 'B' doesn't seem to have any station staff! And NR's costs are about 50% less than 'A', which seems pretty good. Operator 'D' has slightly lower costs per track-km, but the difference (about 5%) is tiny. And costs per train-km are much higher, so 'D' is hardly a model to emulate.

Civity could equally have said 'GB costs for network operation are below average', but presumably this sort of praise for Network Rail was not what the politicians wanted to hear.

### Taxpayer subsidy, the big unknown

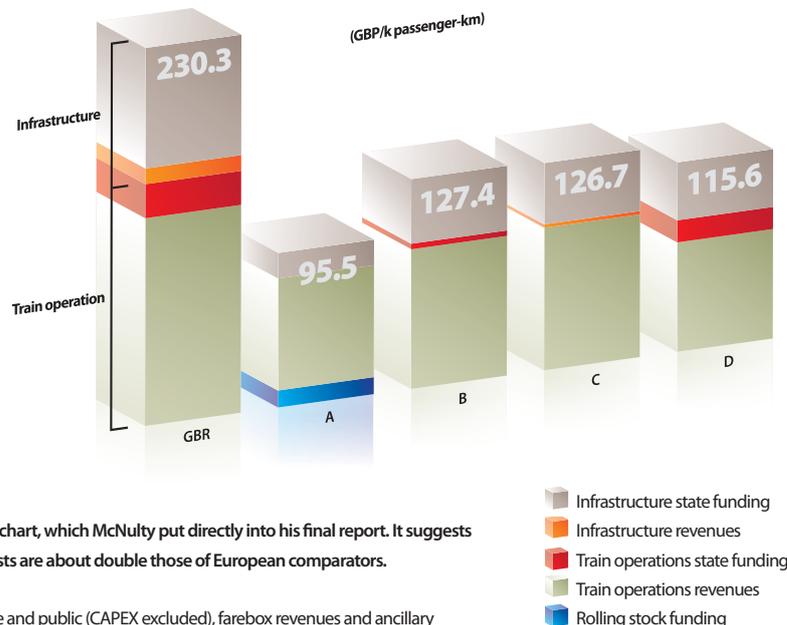
'...taxpayer subsidy per passenger-km is substantially higher for GB Rail than in the comparator countries'. Here we have the making of a myth. Civity actually presents data (Fig 5) showing the income sources for GB Rail and four comparator operators, but these are not countries. The comparators are the largest national operators, but they mostly are long distance and commuter operators. It is the regional operators in Sweden and Switzerland, excluded from Civity's data, that get the most subsidy. Bit of a slip here!

According to the graph, total income (and thus by implication total cost) on the other

four railways is about half the level of GB Rail. Is this really true? And if it is, why is McNulty only complaining of a 40% efficiency gap? This looks more like 100%!

Without seeing Civity's underlying data, it's impossible to tell exactly what is missing. Only the GB data is broken down between state funding of infrastructure, state funding of operations, and passengers. For the other operators, there is identification of 'infrastructure

## Figure 5: Total system funding per passenger kilometre is highest in GB



Civity's chart, which McNulty put directly into his final report. It suggests GBR costs are about double those of European comparators.

1 State and public (CAPEX excluded), farebox revenues and ancillary business excluding financial flows between TOCs and IMs.

state funding' and in one case 'rolling stock funding'.

We know operating subsidy is substantial on all continental railways, but practically nothing is shown. Some operators include it with 'train operations revenue', even though it is paid by government, not passengers. Civity actually states that 'GB is the only country in the sample where train operating companies' income seems misleading in the extreme! SNCF and SJ long-distance services may indeed be profitable, or at least cover their operating costs, but French, Swiss, and Swedish local services receive large operating subsidies that don't seem to show up in Civity's graph.

Elsewhere, McNulty seems to recognise that nobody really even knows how much the railways are subsidised. Subsidies are now paid through local and regional governments. There are unfunded pension liabilities and periodic debt writeoffs. In some countries rolling stock, once purchased by the taxpayer, is treated as 'free', while in the UK and some other countries it is leased. It is accepted that average fares are higher in the UK, but there is no good factual evidence to support the claim that taxpayer support is higher in Britain; very likely it is not.

### Staff utilisation

'Compared to country B staff numbers per train-km are higher in GB' says the heading to Fig 6. It is like the graph on track utilisation. All other things being equal, it is better to do the same with fewer staff, but maybe the additional staff are actually doing more?

With all its 'normalising', why is Civity presenting data per train-km? Wouldn't it be more useful to show it per train-hour?

In an efficient railway, each driver can work about 1,800 hours per year. How far they go depends on the line speed. Are SNCF TGV drivers working a leisurely 900 hours a year, but

at 300km/h, really as efficient as British drivers working twice as many hours but at half the average speed?

Read the strapline and look at the graph carefully. It shows that GBR 19 staffing (the franchised TOCs), per train km is only about 10% above comparator 'B'. If the average speed of GBR 19 trains is just 11% slower than 'B', then GBR staff are actually being more productive.

Note also the breakdown between operation and customer management staff. Presumably the first is drivers, the second station and on-board service (conductors, catering). The caption could have read 'GBR operational staff are significantly more productive than comparator operators'. After privatisation, we did agree new terms with our drivers, increasing productivity 30% or more, so this seems perfectly believable.

That we have more 'customer management' staff, on trains and stations serving passengers, does not sound like such a bad thing either. Maybe they are even earning their keep, selling tickets, helping passengers on and off trains, and serving refreshments?

Actually, this is very odd 'benchmarking' because the conclusion is drawn against only one, anonymous comparator. Was there no data for operators A, B and D? Surely their total staff numbers are presented in their annual accounts, as is their traffic. Or did they make GB Rail look too good?

### Costs

McNulty's favoured measure of 'Value for Money', and the one he puts front and centre in his report, is cost per passenger km. Given that operators tailor train size and frequency to match local market conditions and infrastructure constraints, it would have been more useful to compare cost per seat-km (which is what airlines usually benchmark) or per car-km (which would nicely 'normalise' for different train lengths). These are what train operators actually 'produce'.

Turning these into passenger-km depends on the pattern of market demand, especially peaking by time of day and direction, as well as



Lightly-used regional services distort the British figures. Here single-car No 153333 approaches Terras crossing on the Looe branch on 25 May 2011. This unit, initially hired from London Midland for additional summer capacity, is now on direct lease with First Great Western. W. V. Hunt



French double-deck TGV. The average trainload on here will be somewhat higher than on a Class 153 on the Looe branch, but so what? Courtesy Alstom

on government regulation about fares, loading and service standards.

Ryanair can get 80% load factors by cherry picking its routes, and so can offer very low fares. Network carriers like British Airways serve different, and wider markets, often flying

more frequently (hourly between major cities) but accepting lower load factors. BA still makes a profit, because some travellers will pay for the frequency.

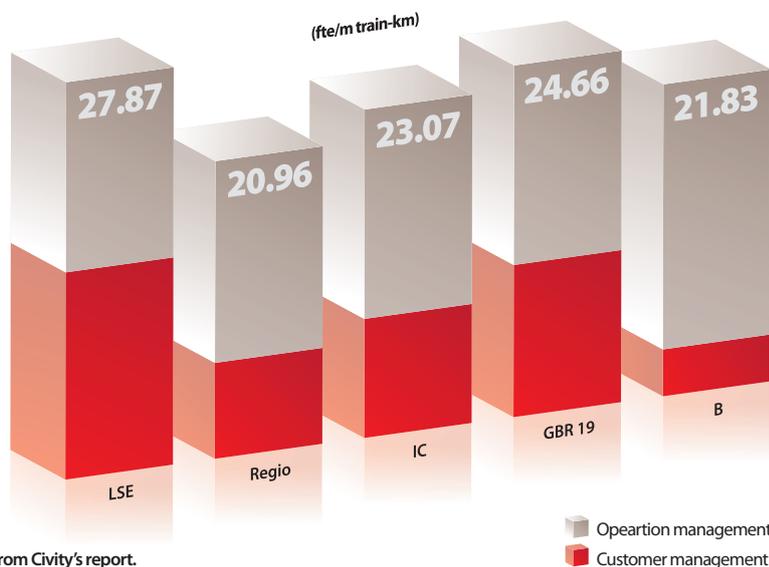
### Geography counts

Even very similar UK train companies have very different load factors: South West Trains (SWT) averages 135 passengers per train while Southern only gets 106, 22% less. It's not that Southern is less 'efficient': both companies run very similar trains packed full into London every morning.

But glance at a map and you will see that SWT serves Basingstoke, Southampton and Bournemouth, business centres that generate good contra-peak flows, filling some seats going in the other direction. Southern trains are more likely to return empty.

SWT has a single efficient four-track line into Waterloo, while Southern has to run trains to several different London terminals. According to recent data from the Office of Rail Regulation, total cost per passenger km is £0.19 per km in Sussex, but only £0.15 in Wessex. On this basis, would McNulty conclude that Wessex (SWT) gives better 'Value for Money'? And if so, can anything be done about it? It's a bit hard to change geography. (By the way, London Underground's overall

Figure 6: Compared to country B staff numbers per train-km are higher in GB



This is from Civity's report.



Frequency pays dividends. Anglia Class 170/2 Turbostars Nos 170204 and 170205 arrive at Ipswich on 14 October 2004, forming a service from Lowestoft to London Liverpool Street. Brian Morrison



load factor is reportedly about 15%. Until Morgan Stanley can be persuaded to move its offices to High Barnet, the Northern Line will always run pretty empty in the contra-peak direction. Good thing McNulty wasn't asked to look at it too!).

### **Devolution**

Scotland's average load per train is even lower, only 66 passengers. and the cost per passenger-km even higher, at £0.24. Following McNulty's approach to its (il)logical conclusion, the best way to improve value for money in GB rail is to support Scottish devolution. If the SNP can be persuaded to take Wales and Northern, so much the better!

### **Aspiration**

Although he speaks of a 40% efficiency gap, McNulty never actually says costs per passenger-km are 40% higher in GB Rail than in the comparators. He knows average fares are higher, and guesses that subsidy also must

be higher, but as we have seen, he never really came to grips with the latter.

Civity only compared GBR 19 in aggregate against smaller subsets of the European operators, excluding the parts of the French, Swedish and Swiss railways that are most heavily subsidised. Ultimately, the basis for his expectation for reducing costs is really just an aspiration, although he does have some ideas how it might be achieved (and some of his ideas are very commendable).

### **The costs trap**

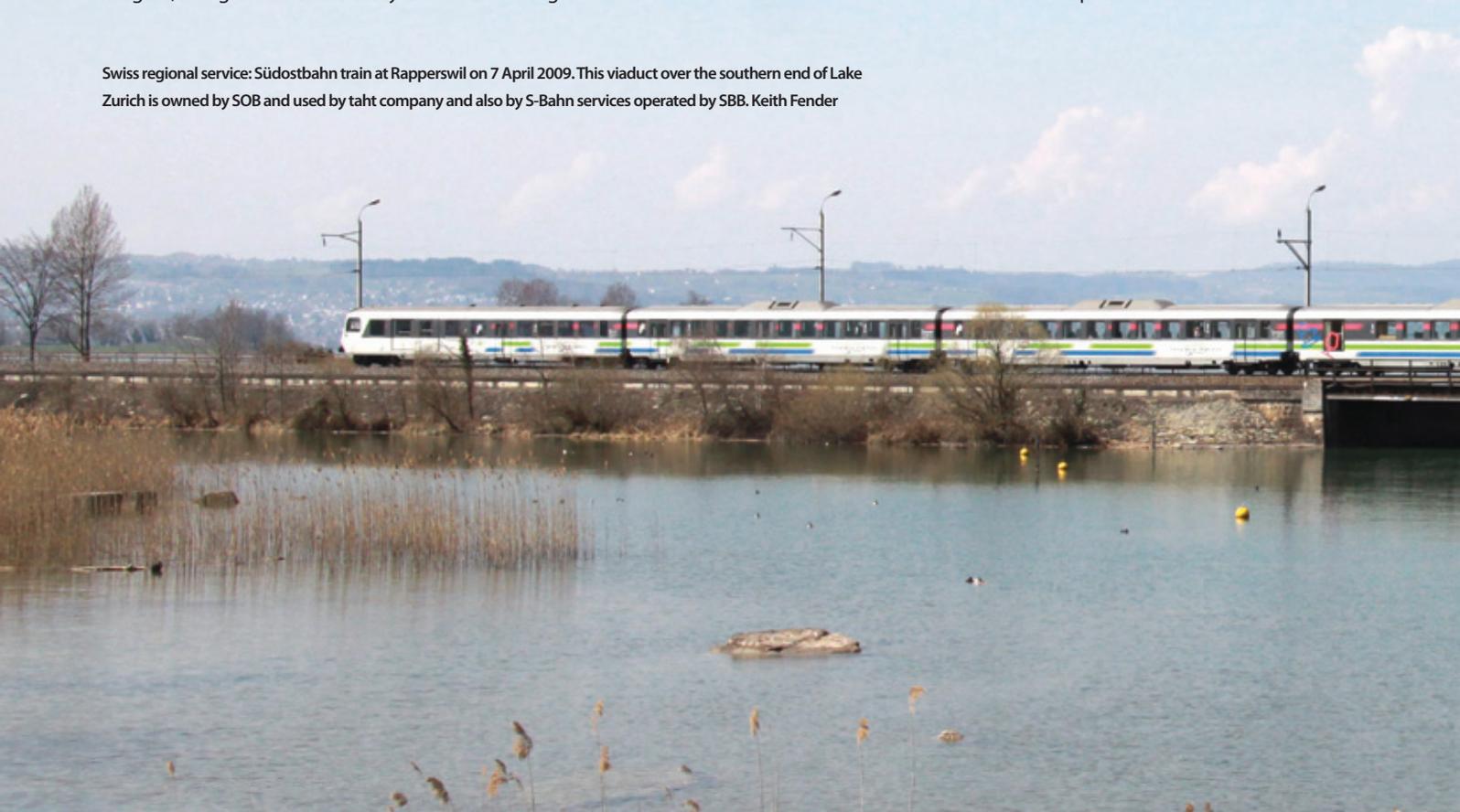
Probably McNulty's biggest (and most dangerous) mistake, is to conclude that in an efficient industry, average costs should always come down over time. In some industries this is indeed the case, as new technology is applied to find ways to produce more with less. We have become used to declining real prices for many products, especially those that can be produced in a country with lower wages.

In aviation, McNulty became used to costs falling, because low-cost airlines found ways to pack more passengers into each plane, to fly them more, and to pay crews lower wages. But average fares on long haul flights haven't fallen in the same way, because fuel and capital charges are such a high proportion of costs, and travellers will still pay for frequency and comfort.

### **Service standards**

Civity does present evidence that franchised German operators, mostly small regional concessions, have achieved 20% cost reductions over the last decade. In comparison, average costs in the UK do not seem to have come down at all, even though traffic has increased about 50%. McNulty seems to be implying that if GB Rail costs have not fallen after franchising, like they did in Germany, then this '20%' is still there to be had. Maybe it is. Another possibility is that underlying unit costs really have been reduced, but this has been masked (and offset) by quality and service improvements.

Swiss regional service: Südostbahn train at Rapperswil on 7 April 2009. This viaduct over the southern end of Lake Zurich is owned by SOB and used by taht company and also by S-Bahn services operated by SBB. Keith Fender





Extra staff is not necessarily a bad thing. Dispatcher at Reading, August 2008. Tony Miles



SWT benefits from a four-class track main line into a single London terminus. Class 159 at Vauxhall. Brian Morrison

McNulty implicitly assumes that quality has (and should) remain constant – a seat km in 1990 was the same as one in 2011. Clearly, much of the cost ‘saving’ in aviation was really due to a decline in service standards (and hopefully Ryanair has found the bottom!). But a railway that did this would be doomed to steady decline. To compete with cars and planes (and staying home and using the internet), trains need to run faster and more frequently, more reliably, with air-conditioning, power doors and even wi-fi.

Regulators have also decided that society can afford retention toilets, wheelchair access, delay compensation, and customer service centres that actually answer the telephone. All of this costs money.

### **Impressive achievement**

As incomes rise, people are willing to pay more for better quality (and staff who can't be outsourced to India are likely to want to be paid more too). It is, in fact, quite remarkable that GB

Rail ‘average’ costs have remained constant, and not actually risen over the past decade. What McNulty considers evidence of stagnation is, in fact, an impressive achievement.

McNulty sees high fares as a bad thing, but they might actually reflect consumer choice. There seems no doubt that average yields in the UK are 30% more than on the Continent. What is not clear, and would be interesting to know, is whether the average passenger (the ‘median’ passenger) pays more or less. Anecdotal evidence is that more than half of UK long distance passengers pay discount fares that are a lot lower than fares in the continental comparators. Maybe this is an opportunity for some useful benchmarking?

What’s wrong with a few people (mostly business travellers) paying very high fares, if this pays for new investment and reduces reliance on government support?

It is certainly true that the UK rail industry costs a lot of money. And there are few industries where managers cannot see many ‘problems’

affecting efficiency. If only the raw materials were cheaper, the workers would accept lower wages, and the customers willingly pay high prices!

There is nothing wrong with setting aspirational targets. But rail service is not a homogeneous product, like tonnes of pig iron or barrels of petroleum. Costs depend on the specific route and service, and the quality that is offered.

There’s no point in producing cheaper apples if what customers really want is better quality fruit, and are willing to pay more for it. Starbucks didn’t set out to sell cheaper coffee. Finding ways to produce more with less is fine, but blindly cutting costs to pursue misguided benchmarks will increase the burden on taxpayers and may well actually reduce ‘Value for Money’.

*The author was a Director of GB Railways (1996-2003) and is co-founder of Hamburg Köln Express, a new train company that will commence services in Germany during 2012. The author thanks Civity for permission to reproduce the company’s graphs.*

