



# Making it happen:

## How rail needs to evolve in the next two, ten and 30 years



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# Essential action points for rail's evolution

**O**n February 28, RAIL Managing Editor and Events Director Nigel Harris returned to the virtual sofa to kick off another much-anticipated new webinar series.

Almost 1,000 people registered to watch the three episodes, which successfully built on RAIL's *Creating a Simpler, Better Railway* webinar series that aired late last year.

*Making it happen: How rail needs to evolve in the next two, ten and 30 years* was designed to reflect the different time horizons of the workstreams within the Government's rail reform package, and the ongoing work of the Great British Railways Transition Team (GBRTT) to implement it.

Following hot on the heels of Secretary of State for Transport Mark Harper's keynote speech at the annual George Bradshaw address on February 7 (RAIL 977), the first webinar looked at the immediate challenge being faced by the rail industry to overhaul fares and ticketing.

How new Passenger Service Contracts will replace the traditional (but now obsolete)

## PAUL STEPHEN examines the key lessons and action points to emerge from RAIL's recent webinar series on the changes that need to be made to ensure the railway's success over the next three decades

franchising system was also considered, as were ways in which rail can better serve local communities.

Featuring a host of industry leaders, including senior members from the GBRTT, the series then turned its attention to challenges over Control Period 7 (April 2024-March 2029) and beyond. These included creating a more accessible network and building a more diverse workforce.

Finally, we ended the programme of webinars by taking a view on the next 30 years, and the longer-term priorities to decarbonise the sector and fulfil rail's potential for modal shift.

In this associated RAIL supplement, we present some of the action points on what can be done right now to start making positive changes in the short-, medium- and long-term interests of the railway and the customers it serves.

We are pleased to have been supported in this series by our sponsors Arriva, Trainline, Independent Rail Retailers, SYSTRA, Atkins, AECOM and West Coast Partnership Development. We are also grateful to all our panellists for the knowledge, expertise and valuable perspectives that were brought through their participation in the various discussions.

### Episode one: The next two years

**February 28**

#### Pace of change a key factor for fares and ticketing reform

**G**reat British Railways must be bold and ruthless, with a new fares and ticketing system that works for the passenger and sells.

That was the message from industry leaders to the Great British Railways Transition Team, which is tasked with setting up a new GBR public body to oversee the rail network and drive forward the Government's

rail reform agenda.

Among GBRTT's main priorities is its Fares, Ticketing & Retail (FTR) workstream. This aims to develop a more modern retail experience, a rollout of digital ticketing across the network, contactless and pay-as-you-go systems in urban areas, and "simplified, best-available, value-for-money options on journeys outside urban areas".

These changes have been described as 'quick wins' for passengers, and improvements that can be implemented ahead of legislation being passed to establish GBR on a full legal basis.

However, according to independent fares and ticketing expert Mark Smith (also known as the Man in Seat 61), a more wholesale overhaul is required if the industry is to plug a financial black hole of £2 billion per annum and restore passenger numbers to at least their pre-pandemic levels.

He favours a 'big bang' approach to fares and ticketing reform, rather than the more piecemeal and incremental approach that seems to have been adopted by GBRTT.

Speaking on February 28, Smith advocated a move towards network-wide single-leg ticketing, combined with a massive simplification of fare types.

He also argued for a "logical and consistent" method of pricing that is less vulnerable to the practice of 'split ticketing' to find the cheapest fares.

"It needs a clean sheet of paper," he said.

"The industry's ability to cut costs is limited, but the ability to grow revenue is much greater.

"There will be winners and losers [from reform], so it's probably better just to rip the band aid off.

"We don't have the data to know what will happen if we reform all fares, but we can have a best guess. You can adjust accordingly after a month or so, to control that risk. So, I would urge GBR to be bold and ruthless with a system that works for passengers and sells."



**Smith:** "Be bold and ruthless with a system that works for passengers and sells."



**Lees:** "We cannot control the media reaction, so it would be a higher-risk strategy."



**Boyd:** "Being incremental right now is what will allow us to be bold."



Two Chiltern Railways Class 170s pass each other on the famous Lickey Incline (south of Birmingham) on November 20 2021. Arriva Trains UK MD David Brown has called for operators to be given greater incentives within National Rail Contracts to grow revenue. JACK BOSKETT.

Independent Rail Retailers Chairman Alistair Lees agreed that the pace of change needs to be quicker. However, he would prefer changes to fares and ticketing to be trialled in a more targeted way on individual routes or regions, before being considered for national rollout.

He said that the rise in digital ticketing would enable operators and independent retailers to gather more data on purchasing habits than before, allowing the industry to test and learn from a more discrete introduction.

“It feels like things are happening at last, but it’s a bit frustrating that we are still talking about this,” he added.

“We need to end the talking and make some things happen, so we are no longer on the cusp. There are still 2,900 different ticket types and restrictions, and we have to do something about that.

“But I am a bit wary of a ‘big bang’ approach. We cannot control the media reaction, so it would definitely be a

higher-risk strategy.

“I have always favoured picking a product or an area and seeing how we can reform or simplify on a smaller scale first.”

GBRTT Programme Director for Freight & Passenger Services Rufus Boyd refuted suggestions that his organisation was moving too slowly.

He said the current pace and scale of change mirrored the reality of the need to carefully create a proposition that would be strong enough to secure political support.

“We are making this [fares and ticketing] central and doing a lot of work on design. But you can’t implement change in a week, or get industry to agree in a week, or get it through Westminster in a week. So, design will be important in the next two years.

“You need to have political consensus behind policy. I’d like to be revolutionary, but I think that being incremental right now is what will allow us to be bold.”

Arriva Trains UK MD David Brown said Government focus should also be on

providing train operating companies with greater incentives to grow revenue, and on commencing a gradual transfer of revenue risk back to the private sector.

He added: “We all agree that there needs to be fares and ticketing reform and the creation of a guiding mind. But we should not forget that the current financial model for the railways is unsustainable, while we are planting that tree.

“It is also important to remove the barriers that are preventing a recovery. MDs of train operators should be able to manage and direct, as that is what they are good at and what they should be empowered to do.”

Trainline Vice President of Industry Relations John Davies said the industry’s “ace card” in growing revenue was to “talk up” rail’s sustainability credentials.

He pointed to Trainline’s recently launched I Came by Train campaign as an example of how the industry should be tapping into changing public attitudes and societal values regarding the environment. →

## Episode two: The next decade

March 28

### “Physical and societal barriers” harming accessibility

“Until we get more disabled people involved in decision-making, and more of that experience embedded in the network, we will continue to make big mistakes.”

That was the stark warning to the GBRTT and the wider rail industry from a leading disability campaigner.

Alan Benson MBE, who is a wheelchair user and co-chair of trustees at Transport for All (the UK’s only national organisation to advocate for the rights of disabled people to travel), also urged a comprehensive rollout of accessibility training to all grades of rail staff.

He argued that until the individual accessibility requirements of disabled people become more central to key design and operational decisions, the rail network will continue to remain off-limits to large sections of society.

“If you don’t have that lived experience and you don’t seek out people with that lived experience to make informed decisions, then you’re going to miss out massively on what accessibility really is,” he said.

“People aren’t prevented from taking part in society by their personal circumstances, but by physical and societal barriers. The fact I use a wheelchair doesn’t stop me using rail - it’s all the steps. And if we remove those sorts of barriers then I can use the network.”

“We have a new route [the Elizabeth line] running from Shenfield-Reading with no accessible toilets on trains, which is a huge error. But that’s just one example of so many things that have an adverse impact on people with a physical or hidden disability - particularly those who are neuro-divergent, where it is often much less obvious.”

“Accessibility training is not just for customer service staff. It must be for board members, senior managers, project managers and engineers, because accessibility has an impact on all roles. Until we train people at a suitable level we won’t get to where we need to be. It must be in our DNA.”

Benson complained that the pace of change is far too slow, with one estimate suggesting that at the current rate of improvement, it would take 70 years to make every station in Britain step-free.

He added that as well as being a moral imperative that would deliver great social value, making the network more accessible made strong economic sense, as more than 20% of the UK population lives with a disability.

GBRTT Accessibility and Inclusion Lead Alison Smith said that the new GBR public body would have an “enduring commitment” to improving accessibility, as part of its remit to oversee the running of the network.

She pointed to examples of where that work had already started - including the development of a new five-year National



**Benson:** “Until we train people at a suitable level we won’t get to where we need to be.”



**Smith:** “Ensure that every pound we spend somehow improves the accessibility of the network.”



**Jackson:** “We know that if a station is step-free, up to 20% more passengers will use it.”

Accessibility Strategy in consultation with disability groups, the creation of a longer-term 30-year strategy, and the release of accessibility audit data to Network Rail.

Other examples of progress discussed during the webinar included the recent introduction of Merseyrail’s Class 777 fleet, which features retractable steps to provide level boarding. The £460 million investment in new trains was accompanied by platform modifications at 56 stations to further bridge the gap at the platform-train interface.

Smith added: “For the investment we make in infrastructure, we must be focused on how those assets perform and ensure that every pound we spend somehow improves the accessibility of the network. Having a strategy will allow us to do more careful and intelligent planning.”

“We need to be realistic that some of the gaps will take us a long time to close, but we won’t be waiting 30 years to make progress.”

For example, we are on track to have 95 Access for All schemes complete by the end of Control Period 6 (March 2024).”

Russell Jackson, global transit director at AECOM, also supported the argument that accessibility should be viewed less as a cost and more of a revenue opportunity.

He said: “We are facing a very substantive affordability problem for the railway, as a result of the pandemic, decreased ridership, and a £2bn annual shortfall in revenue. We can’t just ignore it - all investment needs to be looked at through the lens of ‘does it achieve greater efficiency, decarbonisation or revenue?’

“Accessibility is a natural fit for this because we know that if a station is step-free, up to 20% more passengers will use it.”

Jackson also joined calls to “redefine” the Government’s flagship Access for All fund, which requires schemes to bid against each other for a fixed sum of money.



Benson said the fund was “often the first to get raided” when pressure increases on public spending, and that its competitive nature often leads to counterproductive decision-making and piecemeal results.

“Access for All needs to be more strategic and support a rolling pipeline,” he explained.

“Instead, we get a situation where individual projects must fight against each other, and people must decide if we spend the money on doing three ‘easy’ stations or one really difficult one.”

The webinar also considered the need for wider diversity within a workforce that remains heavily male-dominated and where ethnic minorities are still under-represented.

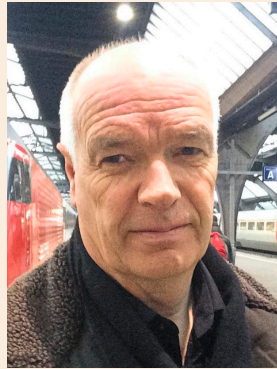
As well as making for a less productive, safe, or customer-focused workforce, the imbalance threatens to compound a considerable skills gap, with 33% of workers aged 50 or over and approaching retirement.

SYSTRA Business Development Director Mike Muldoon explained: “There are some old-fashioned perceptions that rail is just about getting dirty underneath trains while holding a spanner. But that is patently wrong - there are so many different roles and careers on offer.

“Rail is sustainable and you can save the world by working in rail. That’s the message we need to get out there to new recruits.”

Steve Maslin, associate and technical authority for inclusive design at Atkins, added: “We must also be aware of invisible diversity. Anecdotally, there must be a prevalence of neuro-divergent people, so how do we make those people feel welcome and more valued? It’s not just about increasing diversity, but giving more thought to the people already employed.”

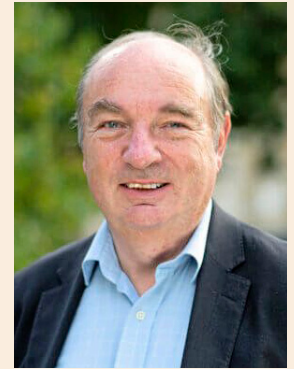
## Episode three: 2050 and beyond



**Baxter: “Running on-time, providing decent facilities, and keeping safety as a priority.”**



**Kennedy-Todd: “Embed how people think about travel into the DNA of the rail industry.”**



**Baker: “The determining factor here is that government sets the price.”**

**April 18**

### ‘Getting the basics right’ is number one priority

The rail industry must refocus its efforts on “getting the basics right” if it is to successfully compete with other modes of transport.

That’s according to SLC Rail Strategy Director Ian Baxter, who also viewed the construction of more new stations to coincide with housing developments as a key priority.

Having worked with the late pioneer and entrepreneur Adrian Shooter CBE at both Chiltern Railways (from 2007-12) and SLC Rail (since 2012), Baxter was mindful of the role of his former boss as the driving force behind the creation of one of the UK’s most successful post-privatisation operators in the 1990s.

He believes that Shooter’s ‘can-do’ attitude to find a way to solve seemingly intractable problems should also be instructive to today’s railway managers.

“We need to get the basics right, which means running on-time, providing decent facilities, and keeping safety as a number one priority,” said Baxter.

“We should also ask people what they want. For example, when we ordered some new trains at Chiltern, we provided two or three interior layouts for our customers to see. We didn’t want to just tell them top-down how it would all work.

“I also recall when

Adrian received a lifetime achievement award at the National Rail Awards in September 2021. He made a speech in which he urged the industry to get back to delighting their customers again. That is what we must do.”

On new stations, Baxter cited the example of Worcestershire Parkway, which opened in February 2020.

Located on what was then greenfield land near to where the Birmingham–Cheltenham line passes beneath the Cotswolds Line from Worcester to Oxford, it is now surrounded by 10,000 new homes with a further 30,000 due to be built.

GBRTT’s Integrated Transport Lead Silka Kennedy-Todd said improved integration with other modes of transport, particularly active travel, would be key to boosting rail and reducing reliance on the car to reach stations.

She argued that this would be important not only in tackling climate change, but also in addressing long-term trends of fewer people learning to drive and the UK’s ageing population.

“We must embed how people think about travel into the DNA of the rail industry,” she said.

Norman Baker, director of external affairs at the Campaign for Better Transport, agreed with Baxter that improving the customer experience would be important, as would government improving rail’s price competitiveness.

“Between 1997-2020 there was a 58% increase in the cost of owning and running a car,” he explained.

“Meanwhile, rail fares have increased by 132% in the same period, when we’ve also had cuts to road and air passenger duty.

“We shouldn’t underestimate the effect in customer decision-making of price points, and the determining factor here is that government sets the price.

“We’ve seen in Germany what happens when you introduce a monthly ticket for local and regional travel that costs just nine euros. Under that scheme [June-August 2022], passenger numbers went up 46% while congestion went down in 26 cities.”



**Two Merseyrail Class 777s meet at Kirkdale on April 22. The electric multiple units offer level boarding, courtesy of Stadler’s sliding step technology and a widespread programme of platform height modifications. Disability campaigners have called on the Government to overhaul its Access for All fund to quicken the pace of delivering further accessibility improvements across the wider network. ALEX AYRE.**



# The twin-track plan f

**O**n March 15, industry leaders welcomed news that passenger numbers had briefly reached more than 100% of pre-COVID levels for the first time since March 2020. From February 10, national usage hit or exceeded 100% for five days in a row, before reaching 103% on February 22.

The data released by the Department for Transport confirmed that usage had doubled in just over a year, and that passenger numbers were starting to rebound strongly not just at weekends and the middle days of the week, but also on Mondays and Fridays.

But beyond these promising headline figures, there was also a strong reminder that the recovery remains far from complete. That is because, also released on March 15, the latest quarterly passenger usage statistics from the Office of Rail and Road (ORR) confirmed that for Q3, 2022-23 (October 1-December 31), passenger journeys remained stubbornly close to 80% of their pre-pandemic level.

Rail Partners responded cautiously to the data and said it pointed to the imperative of

**To lead the post-pandemic recovery, operators are calling for a combination of immediate action and long-term reform. *RAIL* spoke to DAVID BROWN, managing director of Arriva UK Trains**

empowering train operating companies to focus on regrowing revenue and completing the task of closing this gap even further. It is widely accepted that a failure to do so would threaten the future financial sustainability of a rail industry which is currently faced with an annual post-pandemic funding shortfall of some £2 billion.

"Everyone knows we are at a critical point and the current financial situation on the railway is entirely unsustainable - urgent action is required," explains Arriva UK Trains Managing Director David Brown. "The whole industry needs to keep pushing for long-term

reform, but there are also things we can do in the here and now.

"It is essential we get the balance right between longer-term legislative changes that need to wait on space in the parliamentary calendar, and non-legislative changes that can be made immediately to support growth, increase revenue and reduce public subsidy.

"We cannot afford to twiddle our thumbs and wait for reform to happen."

Brown says that operators continue to support the Government's overarching rail reform agenda, including the creation of a new Great British Railways public body to oversee



Grand Central 180105 passes Offord Cluny (Cambridgeshire) with a northbound service on July 25 2022. The Arriva-owned open-access operator is among those to have recovered most strongly since the pandemic. JACK BOSKETT.

# for rail

the industry and administer a new franchising regime of Public Service Contracts.

He therefore welcomed the Secretary of State for Transport Mark Harper's keynote speech at the George Bradshaw address in February, which had been carefully designed to regain momentum for passing the necessary legislation before the end of the current Parliament.

Harper told delegates that the private sector would be asked to play a leading role within the new structure and that he wants the Department for Transport to take a step back from the day-to-day running of the railway. He said that operators were uniquely placed to bring their commercial acumen to the fore to spearhead growth, just as it did after the last major restructuring in the late 1990s.

Brown adds: "Everybody agrees that having a slim guiding mind like GBR and a medium-to-long-term plan is a good thing. The Bradshaw address re-energised the reform piece and demonstrated how a successful railway needs a strong public-private



**“Ultimately, we all want the same thing - a thriving and successful railway that supports economic growth, spreads opportunity and drives forward the sustainability agenda.”**

**David Brown, Managing Director, Arriva UK Trains**

partnership to leverage the value and experience that all parties can bring.

“Ultimately, we all want the same thing - a thriving and successful railway that supports economic growth, spreads opportunity and drives forward the sustainability agenda.

“That means it must be in everyone's interest to remove barriers that prevent operators from driving the recovery and bringing back passengers at pace. The people that are closest to customers are best placed to achieve those things, but they must be empowered to do so now.”

Arriva UK Trains (which operates CrossCountry, Chiltern Railways, London Overground and Grand Central) is in the vanguard of those calling for operators to be given greater commercial freedoms. It argues that operators should be given greater influence over commercial levers such as timetabling, marketing and fares than the current system of National Rail Contracts (NRCs) currently provide.

These NRCs were designed to be a stopgap between the emergency measures put in place during the pandemic and the eventual creation of new Passenger Service Contracts. They pay operators a fixed fee for running services while all revenue risk continues to be borne by the public purse.

Research commissioned by Rail Partners indicates that the Treasury is missing out on as much as £1.6bn over the next two years due to the restrictive and overly bureaucratic nature of the NRCs. Published on November 29 2022, the Fork in the Tracks report calls for the activation of dormant mechanisms in the NRCs to provide operators with greater incentivisation to invest, innovate and grow revenue.

“We have contracts in place now which have gone through transitions during the pandemic, but for which the balance is no longer right,” adds Brown. “You need MDs who can manage and direct their businesses and bring P&L (profit and loss) together properly. What we have at the moment is too much focus on cost.

“You do need to bring costs down, but at the same time you need to grow revenue. We need to see marketing spend not as a cost, but as an investment to increase revenue and reduce the cost to the taxpayer. But these decisions need to be made by MDs who are paid to do it and not micro-managed by the DfT.

“The DfT has shown a welcome sign of intent by considering modest incentives within NRCs, but this is a time to be bold to reflect the

scale of the challenge. A gain-share model is needed that will allow people to take a larger percentage if they grow revenue above a base level.

“The prize is £800 million of additional revenue each year so it seems to me like a win-win situation.”

Brown says that the success of Britain's open-access operators has shown the importance of being agile and responsive. Free from the constraints of NRCs and carrying 100% of the revenue risk, open-access operators including Grand Central have been the most successful in winning passengers back post-COVID.

The latest ORR passenger figures show that Grand Central is carrying 97% of passengers compared to three years ago while Hull Trains is at 102%. LNER led the way for DfT-contracted operators (96%), although the average was just 70%.

Brown attributes much of this success to the industry-leading service provided by open-access operators through driving competition and innovation on their routes while providing much-needed connectivity to areas that would otherwise be underserved by the timetable.

He concludes that it is now clear that the role and contribution of open-access operators must not only be safeguarded, but encouraged to grow.

“You could argue that open-access operators have been driving forward customer experience, innovation and commercial acumen because they have to, or they would simply close down,” says Brown. “The reason Grand Central, Lumo and Hull Trains all perform well is because they exceed customer expectations and are priced attractively, which is something we also see where there is open access across Europe.

“It needs to be protected and enhanced, but there are similar barriers in place to the ones I've already outlined for those operators with NRCs. We've been waiting more than four months for a response to a proposal for Grand Central to call at Peterborough and use paths that are already there. It can't be right that we still haven't had an answer yet.

“Open access is something that we strongly believe can help to open up new markets and we are glad that the Secretary of State has also seen and subsequently endorsed that opportunity.” ■

Contact: [www.arriva.co.uk](http://www.arriva.co.uk)

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**David Brown, Managing Director, Arriva UK Trains**

# The power of data sharing

**The information captured by digital ticketing could be better harnessed to supercharge the industry's ongoing post-pandemic recovery, says JOHN DAVIES, vice president for industry relations at Trainline**

**T**rainline has long been synonymous with its role of spearheading the revolution in digital ticketing. Ever since piloting the first barcode tickets in 2014, operators and independent rail retailers have had to keep pace with its burgeoning popularity.

Attracted by the convenience of having a barcode sent directly to their email account or mobile phone, plus the ability to book and amend travel options remotely, more customers now choose barcode tickets than any other fulfilment type. This includes the traditional ticket office, where operators, including Northern, report that sales have plummeted in the last five years to just 16%.

By the end of this year, rail users will be able to use digital tickets while travelling on any part of the network. For the majority of routes and operators, this should also include the revolutionary new sTicket product that was developed by Trainline, in partnership with the Rail Delivery Group, to provide the rail industry with a first-ever secure solution for digital barcoded season tickets.

But in addition to completing the roll out of these transformative digital products, Trainline has identified a further opportunity over the next two years to make better use of the mass of data they generate. That is because, unlike the purchase of a paper ticket from a vending machine or ticket office, buying digital products through a website or app offers an unparalleled insight into who is using the railway, as well as how they are choosing to travel.

Trainline is highlighting the opportunities that exist from sharing this purchasing data more widely to enable retailers to innovate and improve their services for travellers, while also securing much-needed extra revenue as part of the industry's post-pandemic recovery.

Trainline Vice President for Industry Relations John Davies explains: "Digital ticketing is doing good things for the railway, but we are not yet capitalising on the windfall

of data captured online. It is striking how little we know about our customers and the journeys they make.

"The analogy I'd use is the Tesco Clubcard, which is nearly 30 years old. We don't have any parallel to understand more about what customers are purchasing and it is unfortunate that the industry is not interrogating the data in this way.

"With the exception of Advance purchase tickets, the industry never knows who is travelling on what product and has no data on who is onboard what train. You can't imagine Google or other large consumer-facing companies being satisfied with operating a business on the scale of a national network in this way.

"If the industry wants to improve its financial performance, that has to be a worry. That anonymous relationship between who is buying what has created an entirely avoidable disconnect between the services we provide as an industry and the revenue that it generates.

"When you get a flow of robust data, you can get to a virtuous cycle of hypothesis generation and then you can help customers to make better decisions more accurately and quickly. We can learn from patterns of consumer behaviour as we sell more and more digital tickets."

Davies points to some obvious operational and internal accounting benefits from being able to capture, share and then better utilise these real-time data streams. They range from train planners having a greater ability to target capacity on certain routes and services to train operators receiving a direct allocation of revenue, instead of the current ORCATS system, which aggregates revenue from most products before apportioning it to operators based on an algorithm.

"That's why we think the current Pay As You Go model needs to be evolved as it's rolled out on larger parts of the network," adds Davies.



**“Digital ticketing is doing good things for the railway, but we are not yet capitalising on the windfall of data captured online.”**

**John Davies, Vice President for Industry Relations, Trainline**



"Passengers gain entry to a system by tapping in, but then the operator doesn't know anything else about their journey. That's a really strange way to do things, especially if it's a congested part of the network where there are multiple routes and operators. You aren't able to allocate resources or use price as a lever to adjust customer behaviour if you don't know who is on what train.

"We believe that data can be an enabler to solve some of those problems."

One example of how Trainline has already been able to bring this to bear for its own customers is through its data-led facilitation of split-ticketing. Davies says that by understanding more about customers' decision making and travel habits, the retailer has been able to find an effective way to offer the cheapest fares on a bespoke basis.

By analysing data and consumer behaviour, the retailer was also able to conclude that split-ticketing was generating more revenue from rail users rather than less. "We've done split-ticketing for three years," he adds. "It used to be a bit of a hidden secret, but we've brought it to the mainstream.

"There was some concern within the industry about how this might affect revenue,





Trainline is pioneering data-led innovations such as split-ticketing to create new services for its customers. TRAINLINE.

**“You could even use data for predictive fare evasion. One of the things we are working on now is to understand patterns of where it might crop up and that would allow operators to allocate their revenue-protection resources accordingly.”**

**John Davies, Vice President for Industry Relations, Trainline**

the industry to see if they travelled on the train they said they did because, through our apps, we can see if those tickets are being scanned or not. It would certainly help to drastically reduce fraudulent Delay Repay claims.

“In the future, you could even use data for predictive fare evasion. One of the things we are working on now is to understand patterns of where it might crop up and that would allow operators to allocate their revenue protection resources accordingly.

“We have a seismic opportunity to address all these things in the next two years as traditional travel habits are broken and new ones are being formed. Let’s go to it.” ■

## I Came by Train

Amid the industry’s challenge to plug a financial black hole of some £2 billion per annum, and restore passenger numbers to at least their pre-pandemic levels, Davies says the “ace card” will be to promote rail’s impressive sustainability credentials.

He points to Trainline’s recently launched ‘I Came by Train’ campaign that taps into changing public attitudes and societal values regarding the environment. The campaign is aimed at ‘Generation Z’ travellers who care most passionately about sustainability, but do not always equate that with rail.

Using a concept of ‘train bragging’ instead of flight shaming, the aim is to curb carbon emissions while also securing the under-30s as rail users for the next 50 years.

“We describe sustainability as rail’s secret weapon for growth,” says Davies. “Generation Z is particularly vociferous about the environment and the threat of climate change and if we can convert that thinking then we lock in customers on rail for life.

“To achieve modal shift from air and road to rail, we have an open goal to aim at, but we need most cross-industry messaging.”

**Contact:** [www.thetrainline.com](http://www.thetrainline.com)

but we could see that customers would look for a cheaper fare and then reinvest the saving into another product and travel again.

“It’s an interesting example of doing something appealing to the customer with a positive upside from seeing data in downstream decision-making.”

Having established the value of its own data, Trainline is now calling for the wider cross-industry sharing of information through a rail-industry data exchange. It is working with the Great British Railways Transition Team to understand how this could be achieved in a way that is fully standardised and equitable to GBR, train operating companies and independent rail retailers.

Davies also points to Trainline’s experience from selling railcards in-app that are linked to a customer’s purchasing history.

“At the moment, it is impossible to see a record of ticket purchases at an industry-wide level after a Railcard has been bought. Because we can capture this at Trainline, we not only see what Railcard holders buy, but also understand what they might have bought too. I see it as the industry’s equivalent of a Tesco Clubcard.

“We know that a Railcard holder buys tickets

an average of 20 times a year, which is significantly more than any other group of regular users. So, you could be generating that virtuous cycle and not just anonymously giving them a 33% discount.

“But for this to work, we need to establish a framework to hold all that data in a federated way from where the industry is able to liberate it. We need a level playing field so that everyone has fair and equal access and plays by the same rules.”

According to Trainline, that level playing field should include independent rail retailers being able to sell exactly the same range of products as train operating companies, including heavily discounted advance purchase tickets.

The restriction on independent rail retailers being able to directly offer Delay Repay should also be lifted.

“If everyone offered Delay Repay and was able to access that crucial information, wouldn’t it be amazing to understand the propensity of people in receipt of Delay Repay to spend it on another rail product, or are those people never seen again?” adds Davies.

“From a revenue-protection lens, greater data collection and sharing would also enable

Passengers board a TransPennine Express Nova 1 train at Darlington on January 7 2022. The industry is potentially missing out on billions of pounds through restrictive sales practices around Advance fares, argues Alistair Lees. JACK BOSKETT.



# The invisibility of ava

**“T**he rail network is missing out on hundreds of millions of pounds because it can’t put its product in front of customers. Instead of customers being able to search for prices on just a few trains at a time as they can now, how about we let them see prices for a whole month, just like you can with airlines?”

That was the message from Independent Rail Retailers Chairman Alistair Lees at an All-Party Parliamentary Rail Group meeting on March 13. Having told MPs that this ambition is being frustrated by a lack of open data feeds, he is now urging industry leaders to join forces and open the floodgates to this untapped source of much-needed revenue.

“We have a problem in that, as a customer, I can go online to use a journey planner and be given only a narrow window of five or six

**A more retail-focused approach to ticketing could offer a return on investment in the millions of pounds, says Independent Rail Retailers Chairman ALISTAIR LEES, who continues to lobby for change**

options,” he explains. “It means that the customer must keep entering new search terms or look for earlier or later journeys until they find a price they’re willing to pay.

“This is because the current system [known as the Rail Availability and Reservation Service - RARS2] only allows retailers to access it and search for availability based on a specific query. This is an archaic way of doing things because,

as retailers, we have no visibility of availability on trains beyond the exact parameters that a customer tells us to search for.

“It’s a bit like shopping in the 1960s when everything was behind a counter, and you repeatedly had to ask how much things were before you’d come to a decision on what to buy or how much to spend.

“We want to get to a point where we can



# Availability

offer more options to customers for the whole network and show a calendar view of prices for the next four weeks or more. The information already exists - it's simply inaccessible through current industry systems.

"Just imagine the possibilities if we had access to a data feed showing live seat availability across the network. Rather than waiting for customers to come to us with targeted queries, hoping to land an attractive deal, we could proactively sell unused capacity. That's better for the customer and better for industry finances."

Lees estimates that a shift away from being "passive recipients" of limited availability data based on specific search criteria would empower retailers to be "active promoters" of cheaper Advance train fares instead. He estimates that such a move could be worth

## Retailers call for level playing field

Independent Rail Retailers has repeated its call on government to end the preferential treatment that train operating companies receive when selling certain types of fares.

Lees told the APPRG meeting on March 13 that independent retailers are being undermined by operators which restrict Advance and promotional fares to their own retail channels, and disadvantaged by rules that prevent them from processing Delay Repay claims.

"Operators enjoy unfair advantages when it comes to selling tickets that they then use to convince people to book with them directly," he said.

"They provide features like Delay Repay, which we are not allowed to offer, and create temporary and sometimes permanent discounts that they won't allow us to sell."

"These offers are effectively funded by the taxpayer, and it means the cost of selling tickets online is somewhere in the region of 8%, compared with the 5% that independent retailers take in commission from all ticket sales.

"We ask that all rail ticketing retailing is on a fair and equitable basis with the same rules applying for train operators and independent retailers and to create a level playing field."



**“We want to get to a point where we can offer more options to customers for the whole network and show a calendar view of prices for the next four weeks or more.”**

**Alistair Lees, Chairman, Independent Rail Retailers**

over £500 million per annum in additional revenue for the industry, helping to close a financial black hole that has emerged since the beginning of the pandemic.

"We think that up to a billion pounds is not being sought at the moment because of these restrictive sales practices," he adds. "This is revenue the industry could desperately do with to take some of the pressure off from Treasury to cut costs. We know that the solution is not cost cutting, but on the revenue side this would have a huge impact on industry finances by using some of that spare capacity.

"At certain times of the day and at certain times of the week, we have trains running round the country partly empty with load factors of just 20-25%. As an industry where costs are largely fixed, how can we fill this unused capacity and achieve higher usage than we have today?"

"We think that by releasing these data feeds and having that visibility, retailers can find innovative ways of promoting that availability to customers and stimulating demand into places where we need it and have capacity.

"Imagine if instead of waiting for customers to ask us what might be possible, we could say to them, 'Where do you live and how much do you want to spend?'. You could then email them with half a dozen different ideas that they might not have even thought of."

He adds: "This is not about promoting cheap fares, but using up spare inventory. The current system might suit people who are time-constrained and know exactly when they want to travel, but not if you have more flexibility or are particularly price-conscious.

"If we can unlock it then this is an opportunity to not only provide a better service to the customer, but it could also go a long way to fixing the industry's financial problems."

According to Lees, a proposal to open this data to third parties was made to the Rail

Delivery Group - which manages RARS2 on behalf of the rail industry - some seven years ago. He continues to press the case with the Great British Railways Transition Team, which is expected to assume responsibility for fares and ticketing strategy under the Government's rail reform agenda.

Independent Rail Retailers says it even offered to bear some of the cost of moving to a new system. However, Lees argues that the sheer amount of additional revenue it would generate should make it a fairly straightforward business case for the RDG or the new GBR public body to consider.

He concludes: "RARS2 is yield and train-management focused, but now needs to become retail focused too. We will continue to lobby for these changes, but I find it astonishing that the industry hasn't been able to get that central drive together to get on and do this to sell more tickets.

"We just don't have the tools at the moment or the visibility and information we need. This is very much about open data and avoiding the wasted opportunities that we currently see everywhere.

"This sort of thinking is where the private sector really adds value, and although we've been pushing for these changes since before the pandemic, the railway's current finances mean they're now absolutely critical.

"We're not talking about a massive change, but it would still have a transformative effect on rail retailing that would generate millions - possibly hundreds of millions - of extra revenue from existing services. And if the industry can't justify the modest investment required for this, while accepting the £20m business case for the rebuilding of a small station like Soham just two years ago, there's something very wrong!" ■

**Contact:** [www.independentrailretailers.co.uk](http://www.independentrailretailers.co.uk)

# AECOM

# Setting the standard in

## From alliancing and collaboration to training and incentives, AECOM outlines how it is helping the UK rail industry to build and maintain a resilient, safe and sustainable network

**B**y the end of this year, Network Rail and other arm's-length infrastructure providers including HS2 Ltd and East West Rail will be required by government to be PAS 2080 certified. This will make them fully compliant with the latest standard (formally known as Publicly Available Specification 2080) for managing carbon in building and infrastructure.

First developed in 2016, PAS 2080 marked a shift towards looking at the whole value chain of projects worth more than £1 million to reduce carbon through intelligent design, construction and use. It was subsequently revised and updated in 2022 to incorporate five fresh themes to help induce the behavioural changes that are needed to tackle climate change.

These themes comprise taking an integrated approach to the built environment (and not just infrastructure), applying systems thinking to the transition to net zero, taking a whole-life view of assets to balance capital carbon investment with operational and user benefit, using nature-based solutions and increasing collaboration.

The focus on the whole value chain means that suppliers will also need to commit to being PAS 2080 compliant in addition to the larger client organisations that they are procured by. Global infrastructure consultancy AECOM is therefore collaborating with NR and suppliers to not only ensure its own compliance, but to assist others in the rail industry to embrace PAS 2080 principles too.

"The key for organisations like ours is that large bodies like Network Rail are placing the requirement for PAS 2080 on their supply chains," says Ian Davies, technical director at AECOM. "We must therefore be certified to be able to work on any of its projects."

"PAS 2080 offers a framework and a global standard for carbon management in infrastructure. We welcome the shift in emphasis it brings on managing carbon and working together from the very start of projects so that the necessary thinking runs all the way from design through to the build stage and to the end of life of assets to manage whole-life carbon."

AECOM Technical Director, Environment and Sustainability John Skinner adds: "PAS

2080 is similar to the standard we apply every day to embed safety into projects. I think of it as where we were with health and safety 25 years ago when we fully integrated that into our daily thinking.

"It is something we have embraced, as sustainability is also a critical part of efficiency, so it makes even greater sense to do this in today's financially constrained environment. We have regular courses on PAS 2080 for staff through our learning platform, AECOM University, but we recognise that it is a journey that we are still at the start of."

To support Network Rail and the wider supply chain in its compliance with PAS 2080, AECOM co-authored NR's 30-year Environmental Sustainability Strategy. This document focuses on four key priorities to deliver a low-emission railway, a climate-resilient network, improved biodiversity and minimal waste with a sustainable use of materials.

Within the strategy, NR has set science-based targets to reduce what are known as Scope 1, 2 and 3 emissions. It recognises that two of the three major contributing emissions categories are not within NR's direct control, but related to the supply chain. It has therefore set ambitious targets to cut emissions in each category by between 28-46% by 2029, and for 75% of its suppliers to have science-based targets by 2025.

The science-based targets initiative is backed by the United Nations to help meet the goals of the international Paris Agreement that was adopted in 2015 to limit global warming to 1.5°C.

In 2020, NR became the first railway company in the world to set those targets to maximise the positive contribution rail can make to the lives of passengers, society and the economy while minimising any impact on the environment.

AECOM Global Transit Director Russell Jackson says: "As a Network Rail supplier, AECOM must meet the requirement on us to reduce carbon in our designs and operational activities. We have science-based targets in place to monitor this performance."

"NR's Environmental Sustainability Strategy provides the high-level document and sets the



agenda under which all other NR documents, targets and standards sit, and applies across industry.

"It's interesting how in less than three years since the strategy was published, we have moved to a position where NR is putting all its stakeholders on the same page. This is a whole-industry strategy, as demonstrated by our work with suppliers, train operators and other organisations as part of the Network Rail carbon task force to cut emissions across the NR estate."

Skinner adds: "There is an expectation that the supply chain will embrace and sign up to the science-based targets. PAS 2080 provides a pathway to meeting those targets that NR has set."

"We are working with NR to be able to measure Scope 3 (indirect) emissions created by the supply chain. Once you can measure that performance, it starts to become quite interesting in being able to set reduction targets. We are starting to see that happen in other countries and I can only see that it will increase here in the UK."

Examples of where carbon management is already part of AECOM's design work are the reopening of the Northumberland Line to



**“As a Network Rail supplier, AECOM must meet the requirement on us to reduce carbon in our designs and operational activities. We have science-based targets in place to monitor this performance.”**

**Russell Jackson, Global Transit Director, AECOM**

# Carbon management



GB Railfreight 66733 heads an engineering train at Morley on January 28. The station is being completely rebuilt as part of the Transpennine Route Upgrade to deliver an electrified railway between Manchester and York. The TRU is one of several major projects for which carbon management forms part of AECOM's designs. MIKE BROOK.

way as health and safety."

In Control Period 7 (April 2024-March 2029), AECOM aims to be at the forefront of the low-carbon design revolution. By tracking carbon in design across major projects and comparing performance on a global basis, it hopes the data could be used to drive best practice, innovation and ever-increasing carbon-reduction targets.

An expansion in training across the industry with support from senior management will also be required, as carbon reduction through design can only be delivered by engineers fully versed in the use of carbon tools and wider sustainability assessment.

AECOM also advocates the wider use of alliancing and more collaborative contract types in CP7 as the best route to delivering not only carbon reduction, but also cost efficiencies at all stages of the project lifecycle.

Designers and contractors need to be incentivised to work together to drive innovation while strong client and operator engagement will also be important at the critical stage of asset handover for operations and maintenance.

Jackson explains: "Alliances and design and build contracts are inherently collaborative and partnership-based, and the more NR embraces and rolls them out, the more it will be in a position to reduce carbon and cost. Everything the rail industry does has to be seen through the lens of the current affordability and decarbonisation challenges. They are much the same thing anyway, as reducing carbon will also take out cost.

"All of our experience in achieving efficiency and decarbonisation goals tells us that increased success goes hand in hand with collaborative delivery models. For example, the South Rail Systems Alliance puts partnership at the heart of its delivery philosophy, with parties aligned to a range of key performance areas to enable continuous improvement. The SRSA was also applying PACE [Project Acceleration in a Controlled Environment] principles five years ago - well before the approach reached a national audience.

"The interesting challenge in CP7 will be for the new Great British Railways public body to maintain the momentum created by NR, balancing the opportunities afforded by increased devolution to the regions with the consistent approach to carbon management and PAS 2080." ■

Contact: [www.aecom.com/uk/](http://www.aecom.com/uk/)

passenger services and the Transpennine Route Upgrade.

AECOM is working towards carbon-reduction targets from a GRIP 3 baseline of between 10-50% for design. This work draws on the Scope X initiative that was introduced by AECOM in 2021 to reduce carbon through design on all its major projects. It considers embodied and operational carbon across the entire project lifecycle and embeds net zero, resilience and social value targets into AECOM's account management software program.

"Scope X was implemented around two years ago to acknowledge that most of our carbon sits in the work being done by our clients," says Skinner. "We've responded to that challenge by committing to reducing carbon by at least 50% in everything we design and the schemes we are working on.

"The expectation is that all of our 50,000 talented engineers, scientists, architects, program and construction managers around the world, along with our Board of Directors and Executive Leadership Team, will sign up to use Scope X to contribute positively to society and the planet.

"It will take time to roll out across a business

the size of AECOM, which generated some \$900m worth of revenue in its transit business worldwide, but it will be aided by the groundswell of energy from young career starters to solve this."

Jackson adds: "Demonstrating compliance and continuous improvement to clients is a differentiator in the consultancy and contracting business. Ultimately, it will be a decision for our clients on how fully these designs are implemented. But we are spending a lot of time and resource internally on how you track and monitor carbon and you could, perhaps, see a situation where the top ten consultants are eventually ranked on carbon performance.

"Meeting the targets that we are setting ourselves and which are set by NR is a differentiator at the moment, but it should be a requirement that you cannot renege from. If other organisations can't catch up in this space, I'm not sure what their place will be in the future industry.

"We would like to see greater consistency in the application of carbon management to other projects that might have a capital value of less than £1m. We need to go on a journey, so it becomes second nature in design in the same

# Aiming for greater accessibility



**Spearheading the integration of inclusive design using persona narratives, STEVE MASLIN, Atkins' technical authority for inclusive design, is on a mission to transform the customer experience**

In August 2021, Atkins - a member of the SNC-Lavalin Group - was appointed by the Department for Transport to conduct an accessibility audit of all 2,500+ stations in Great Britain over the following two years. The audit was intended to identify improvements and highlight areas of excellence that will form a new public database so that people can better plan their journeys with greater confidence. It will also shape future investment in accessible rail travel alongside other schemes, including Network Rail's Access for All programme, as part of a National Disability Strategy.

The Atkins-led team reached the milestone of completing an accessibility audit at all 2,500+ stations in March this year.

Underpinning this assessment and Atkins' subsequent recommendations is a focus on enabling positive and inclusive customer experiences. This is achieved by utilising persona narratives that have been derived from stakeholder engagement to work through the individual issues and needs affecting customers currently using the railways and those currently excluded from the network.

Steve Maslin, Atkins' technical authority for inclusive design, explains: "When we try and understand value, we usually try and quantify it in a financial way. But often it is an experiential thing that relies on anticipating

what the user experience will be. For example, a pen isn't a very valuable item until you try and understand its purpose, which is to communicate ideas and as a means of expression.

"We need to understand the value of positive user experiences and inclusive user design.

"It should be obvious that if a pregnant woman, someone with a young family, wheelchair user or elderly person isn't able to find a toilet then they might decide not to travel by rail.

"If you begin to use persona narratives, like we have in the stations audit, then you begin to understand the value of inclusive service design much better. The railway has traditionally used fairly limited terms such as People with Reduced Mobility. There is an estimated 23% of the UK population living with visible and invisible disabilities and we need to move on from that by using the full set of persona narratives, including mobility."

To help inform these persona narratives, Maslin - who is also a published author, architect and consultant - also developed 'The Envelope of Need' with Michael Clinton, a Director at the Schumacher Institute for Sustainable Systems.

The Maslin-Clinton Envelope of Need places people's accentuated and acute experiences

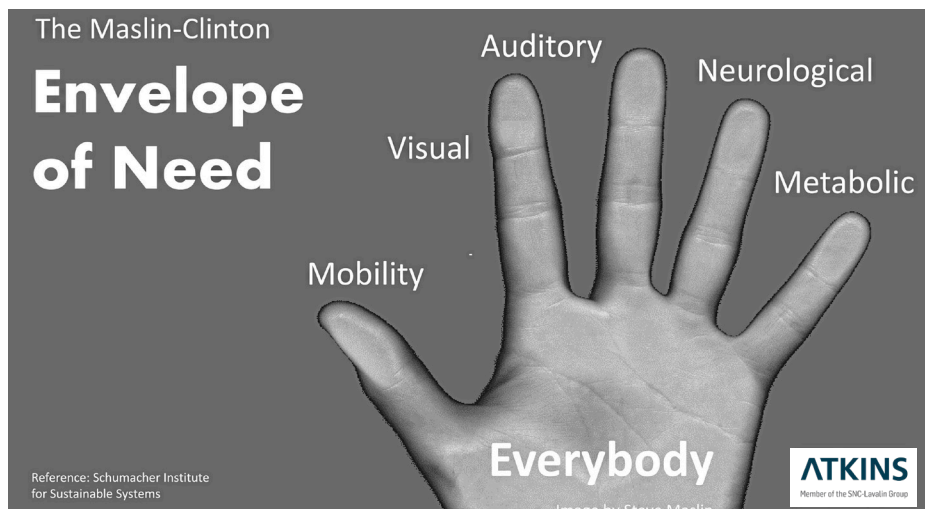
into five criteria that can then be applied to the design of built environments and services to the benefit of all.

"Society historically made the performance envelope of infrastructure too tight and that has left people behind," adds Maslin.

"We developed our five headings [see graphic] to shine a light on diversity, society and the built environment to see where the issues really are. For example, there is a neurological heading in which conditions like autism and dementia would sit while the metabolic category would include people with dietary conditions or toiletry needs.

"If we get design wrong and these needs are not heeded, people are left outside of the resulting envelope of performance and the result will be injurious, impairing and inequitable for individuals and society."

To achieve greater accessibility, Atkins' design teams recommend that clients adopt a 'continuity of thinking' with regards to passenger journeys from before arrival at the station or boarding a train. Most passengers will require a change of transport mode at either a multi-modal or active travel hub, where particular attention should be paid to meeting passengers' needs such as not only step-free access but through the adequate provision of toilets and quiet spaces.



Source: Schumacher Institute For Sustainable Systems.



Maslin says: "A clear understanding of how multi-modal travel connects together is key. That transition is often one of the trickiest things for people, certainly from a mobility, visual or auditory point of view.

"For example, if you can't hear announcements or what people are saying, there is a tendency to avoid asking, which makes providing clear visual information particularly enabling. Or, if you are autistic, an interchange can be hectic, busy and fairly intense from a sensory perspective, which is why there's a move towards having quiet spaces. Moreover, personal security is important to many, leading to a need to consider further how people might feel safe at unstaffed stations

"But what is often under appreciated is the provision of toilets. This isn't a rail-only issue, and we need to properly think about our transport nodes and the facilities they provide.

"When we are designing transport hubs, we need to start with people first and then work backward. For too long, we have expected people to respond to the infrastructure rather than the other way round."

According to Maslin, one possible solution to accelerate and more cost-effectively deliver accessibility across the network would be to encourage local partnerships between

infrastructure operators and local communities and businesses. For example, forming a partnership with a nearby or on-site cafe could be a useful way to introduce facilities such as toilets and warm and quiet spaces into places where they are not otherwise available. Meanwhile, selling tickets from retail outlets could offer an opportunity for passengers to benefit from support and assistance in the absence of a fully staffed ticket office.

"We need to consider stations as far more than a piece of civil engineering at the platform-train interface," argues Maslin.

"We need to understand how they fit into the social fabric of the communities they serve and then optimise their social value by engaging existing local social and business assets.

"We know that for a lot of people, if they are



***"The more local people are engaged and stations are integrated into their local community, the better."***

**Steve Maslin, Technical Authority for Inclusive Design, Atkins**

**Despite the presence of a hump (amid other identifiable challenges), the height difference at the platform remains substantial at North Llanrwst, creating difficulties, particularly for those with pushchairs and users of wheelchairs. Atkins has completed an accessibility audit of all British stations to create a public database and help target future investment. PAUL BIGLAND.**

presented with the choice of navigating a website or just asking someone for assistance in a ticket office, they will always do the latter. So, how can we enable customers to find assistance when purchasing tickets?

"The more local people are engaged and stations are integrated into their local community, the better. We could do that through lots of ways like station adoption by community groups or teaming up with local schools so that the station becomes an educational facility about respecting and using the railway."

He concludes: "We still have a long way to go, but the message is a positive one. There are key people who care about this and, alongside the data from the audit, should be able to begin resolving these longstanding issues." ■

Contact: [www.atkinglobal.com](http://www.atkinglobal.com)

# Decarbonising Britain

**With the UK network striving to reach net zero by 2050, transport infrastructure specialist SYSTRA is in a unique position to offer invaluable insight and global best practice from both the client and the contractor side**

**S**YSTRA is one of the world's leading multi-disciplinary engineering consultancies for rail and urban transport, as demonstrated by its impressively large and varied worldwide portfolio of products. As a global leader in transport infrastructure, it is in a strong position to draw on reference projects from across Europe and beyond, plus internationally developed best-practice methodology.

For SYSTRA's UK-based business, this mutually beneficial knowledge transfer is particularly valuable as it looks to apply those learnings from abroad to optimise decarbonisation and climate resilience across the UK network. Business Development Director for the UK and Ireland Mike Muldoon explains: "The UK is a very important market for us, and we have a large presence here of approximately 1,000 people who contribute to UK plc.

"The UK continues to punch above its weight internationally in engineering and technical expertise, but it shouldn't always seek to influence. There's no harm in learning best practice from elsewhere. The great thing about being an international business is that we're able to import those lessons, but also offer support to other parts of the global group. That synergy between local and global is vitally important to tackling some of the challenges that together we face."

A prime example of where this knowledge and experience could be put into practice to help decarbonise the UK network is the Banedanmark Electrification Project. Unlike in the UK, where electrification is currently in abeyance following well-publicised delays and cost overruns to flagship wiring schemes including on the Great Western Main Line, electrification in Denmark is considered an international forerunner in cost-efficient and on-time delivery.

Having electrified around half of the country's suburban lines in the 1990s, state-owned rail infrastructure operator Banedanmark is currently electrifying further parts of the network to cut carbon emissions, increase capacity and provide shorter journey times. SYSTRA has been advising Banedanmark on the electrification of more than 1,300km since 2013, providing multi-disciplinary advisory services for all stages of the project, from defining the tender strategy through to construction, which is expected to finish in 2027.

"SYSTRA is unique, as we can be involved in projects from the client side just as much as the contractor side," says Ludwig Cuffe, international project director at SYSTRA. "This gives us an overall view of what a good project

looks like, from strategy and design through to implementation.

"The programme in Denmark is particularly interesting, as Banedanmark opted to embark on large-scale investment across the entire network. The electrification is part of a much bigger scheme alongside delivering new rolling stock, high-speed lines and ERTMS-based digital signalling systems.

"It is also interesting because a single contract was awarded [to Siemens and Per Aarsleff A/S in 2015] to electrify all nine rail routes totalling 1,300km, to benefit from the economies of scale. This has also been successful in helping to keep the project closely aligned with its timeline, as it took only two years to go from a decision to issue the tender in 2013, to the award of the design-build

contract and detailed design discussions with the contractor."

According to Muldoon, this approach could be well suited for deployment on a regional scale in the UK, once funding decisions are made to increase the percentage of the rail network that is electrified from its present level of just 38%. It is commonly accepted that a rolling programme will also be needed as the industry strives towards meeting the government's targets of removing all diesel-only trains by 2040 and reaching net zero by 2050.

"One issue we often encounter in the UK is creating artificial interfaces in schemes," he adds. "The way they've done things in Denmark could suit some wiring schemes in the UK and could be an area where the



Lyon's tram network consists of six lines including T6, which SYSTRA helped put into service in 2019. SYSTRA forms part of a consortium that is project managing the creation of the future T10 line, which will add a further 8km and 14-16 stations to the south of the conurbation by 2026. ALAMY.



# n's railways

proposed new Great British Railways public body brings harmony where we've previously had vested interests.

"Network Rail has its own frameworks and procurement models across its regions, but we only see small-scale implementation, for example on the Midland Main Line between Kettering and south of Leicester.

"We also need a rolling programme, which has been a consistent message from the Railway Industry Association on behalf of the supply chain. One of the key learnings from Europe has been the need to commit to projects and then see them through."

In addition to designing and helping deliver sustainable transport systems and infrastructure, SYSTRA has opted to take a more proactive stance by accelerating the alignment of its activities with the Paris Agreement. This international treaty was adopted in 2015 to avert the worst potential consequences of climate change and to try and limit global warming to between 1.5-2°C.

SYSTRA has responded to the agreement by



**"The UK continues to punch above its weight internationally in engineering and technical expertise, but it shouldn't always seek to influence. There's no harm in learning best practice from elsewhere."**

**Mike Muldoon, Business Development Director for the UK and Ireland, SYSTRA**

developing a Sustainable Design & Construction Framework to help incorporate the challenges associated with climate change in its global strategy and corporate culture. The framework is being rolled out across SYSTRA's national business units for engineers to place at the heart of projects they design and manage.

"All entities have come together across the global group at SYSTRA to design and implement this framework," says Muldoon.

"Its four main categories [in resource efficiency, climate change adaptation and mitigation, preservation of the natural environment and quality of life] lead to subsets

under which projects can be evaluated. You end up with a matrix of values, for example water efficiency in hot climates, to be considered as you analyse the project you're working on.

"The objective of using this framework in rail is simple. We know that rail is a fundamental part of decarbonising transport, but there are better and worse ways to 'do rail'. We are making sure we deliver rail and urban transport schemes in a better and more sustainable way."

He adds: "We also know that when we talk about the total cost of asset ownership, we often think about monetary value. But it is far greater than that. This model helps us to better quantify those values and give us the power to consider criteria in a more robust way to make sometimes-difficult decisions."

Those difficult decisions often include the trade-off that is increasingly required between the upfront cost of project delivery and the whole-life cost of assets that will be susceptible to the effects of changing climates. These include (but are not limited to) rising temperatures and less frequent but more intense periods of rainfall.

A powerful case study for incorporating climate resilience is the future T10 line in Lyon, which is expected to be commissioned in 2026 to extend the French city's tram network even further. As part of its project management of the scheme, SYSTRA employed its new framework to deliver a sustainable low-carbon tramway featuring rainwater harvesting, recycled materials and a low-carbon worksite.

Muldoon adds: "Lyon has described itself as a city transforming itself to remain habitable in the summer months in the next 30 years. That puts into context the future reality that Europe needs to consider. In 2022, we weren't that far behind, with 40°C reached in parts of the UK.

"We can't ignore that some of these sustainability and resilience measures may influence the upfront cost, but we need to look at the 150-year whole-life cost of assets. You will easily save cost by having assets that are durable for the long haul.

"I think that what Lyon is doing is quite visionary in terms of the financial evaluation because if the key criteria are today's prices, then you simply won't get long-term value from assets. By using our design tool, you can build that in from the outset, which is always better than trying to retro-improve a system." ■

**Contact:** [www.systra.co.uk/en/](http://www.systra.co.uk/en/)





West Coast Partnership Development is advising on the design of the new train fleet for HS2 and its interior, scoping the proposed customer experience on-board and at stations plus planning the train service for high-speed and existing inter-city services on the West Coast Main Line. HS2 LTD.

# Shaping the HS2 exp

In August 2019, the Department for Transport announced that a joint venture between FirstGroup and Trenitalia had successfully bid to operate the new West Coast Partnership (WCP) franchise.

Commencing later that year, WCP comprised two parts to maximise the once-in-a-generation opportunity to set a new benchmark for rail services following the arrival of Britain's newest railway. While Avanti West Coast (AWC) took over inter-city services on the West Coast Main Line from December 9 2019, West Coast Partnership Development (WCPD) was established to design new high-speed services for HS2, as well as reshaping existing AWC operations, ahead of the opening of Phase 1 of HS2 between London and the West Midlands in 2029-33.

## West Coast Partnership Development's Customer Experience and Commercial Director JOOST NOORDEWIER tells *RAIL* how the shadow operator for HS2 is developing and designing future high-speed services

However, in common with all franchised operators in England, WCP was transitioned onto a shorter-term Emergency Recovery Measures Agreement in the wake of the COVID pandemic.

That ERMA was extended in March to run until at least this October. Also in March, the Government responded to mounting media speculation by confirming that all phases of

HS2 from London Euston to Manchester via the West Midlands are to go ahead.

While there have been changes to the original construction schedule for HS2, WCPD's objectives as shadow operator remain clear. That is to work in lockstep with HS2 Ltd and other partner organisations to shape the future of the new services that will use the infrastructure and to optimise the customer



# erience

experience for those who travel on it.

As part of this close-knit partnership, WCPD is committed to championing HS2's end users, with the aim of setting new standards for the high-speed services that will deliver more capacity, quicker journey times and a step-change in customer experience. The first passenger train to use HS2 is not due to run until 2029-33, but the work of WCPD to mobilise these services is already in full flow.

A Hitachi and Alstom joint venture has been awarded a contract worth around £2 billion to build a fleet of 54 high-speed trains that can run at up to 225mph. The fleet will also be 'classic compatible' so that trains can run onto the existing network to destinations beyond the limits of HS2 such as Glasgow, Preston, Manchester and Liverpool.

Meanwhile, construction continues at pace



**“Our trains need to be the equivalent of a Swiss army knife to appeal to a wide range of customers and encourage them to take the train instead of the car, or the train instead of the plane to Scotland.”**

**Joost Noordewier Customer Experience and Commercial Director, West Coast Partnership Development**

at over 350 sites between Crewe, the West Midlands and London with 30,000 jobs supported by the programme and £23bn contracted into the supply chain.

To develop its Passenger Proposition while both the line and rolling stock is being delivered, WCPD must first overcome several challenges. They include understanding the different markets the railway will serve as well as being flexible about future needs.

Customer Experience and Commercial Director Joost Noordewier explains: “One of our key tasks as shadow operator is to develop the customer experience. The dilemma we have is to appeal to all our customers from various markets.

“After the opening of Phase 2a [to Crewe], we will be carrying people on trains between London and Birmingham Curzon Street with a journey time of around 49 minutes, London to Manchester in around 90 minutes, London to Liverpool in around 94 minutes and London to Glasgow in around three hours 45 minutes.

“Our trains therefore need to be the equivalent of a Swiss army knife to appeal to a wide range of customers and encourage them to take the train instead of the car, or the train instead of the plane to Scotland.”

He adds: “The other challenge is that HS2 won't open for another seven to 10 years and the trains our customers use will be in service for another 30. The difficulty therefore is in predicting what customers will want not only when the line opens, but also into the future.

“To help understand what our future customers want, we have set up a customer community of more than 5,000 people living along the route. Through scenario planning we can't possibly anticipate everything, but we have learned enough to ensure we have the right facilities on the high-speed trains for our customers.

“Although customers' needs might change, we do know that people want punctual and reliable services, clear information when there is disruption, a guaranteed and comfortable seat, mobile and Wi-Fi connectivity plus transparent and simple fares. We also know that railways that deliver these are rewarded with high levels of satisfaction from their customers.”

As HS2 is designed to be a busy high-frequency railway with limited dwell times at stations, Noordewier says there will be a requirement for timely and clear passenger communications as part of a “seamless” customer experience. He stresses that wayfinding, the availability of facilities such as toilets and catering as well as disruption management will all be key priorities.

No final decision has yet been made on the approach to seat reservations on high-speed trains, although WCPD knows there will be a need to

communicate clearly with customers to make it quick and easy for them to find their seat.

According to Noordewier, who has worked as part of FirstGroup plc for over 17 years, helping win rail bids and mobilise new companies, work also continues in conjunction with the Great British Railways Transition Team to deliver simplified and value-for-money ticketing on HS2. This will help ensure a positive perception for rail and build trust with customers who are now travelling in different ways since the pandemic.

WCPD is also working with local partners on how to optimise arrangements for customers interchanging at their origin or destination station through improved integration with other transport modes, for example buses and trams, active travel (cycling and walking) and parking for electric vehicles.

But with only limited time left to complete the substantial planning required to design the most effective service and deliver the transition to HS2 smoothly, Noordewier points to the critical importance of partnership working to turn this shared vision of change to a reality.

“We work extremely closely with our partners because we know this is the best way for us, as an industry, to deliver success,” he says. “We have successful partnership working with HS2 Ltd, Network Rail, the GBRTT and the DfT on high-speed workstreams and we continue evolving to ensure we stay focused on delivering the best for our customers in the advice and recommendations we make to the DfT.

“We have an unrivalled opportunity for fresh thinking on HS2. It is a mega-project that represents a blank canvas to achieve meaningful modal shift to rail as we play our part in helping reach the goal set by government for the UK to be net zero by 2050.

“For high-speed operations, we are working closely with our partners at HS2 Ltd to understand and map the journey to achieving an all-electric net zero railway where the trains, stations, depots and other infrastructure all use zero carbon energy.

“Ultimately, if we are to attract people back to rail in a post-pandemic world where customers are travelling differently to before, we need to deliver a value-for-money service for our customers that is also cost-efficient in the investment from taxpayers and day-to-day operations.

“We will continue to put customers at the heart of everything we do with our partners to develop a shared customer experience vision that allows people to seamlessly get to where they need to and work and enjoy themselves while on the train.” ■

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