GBR: planning for success

Whatever the future holds for Britain's railways, stakeholders need to find better ways of working together to develop and optimise the network. **BEN JONES** finds out how Swiss consultancy SMA is helping some of Europe's biggest and busiest railways transform their long-term planning processes

Transport Secretary Mark Harper's speech on 7 February offered some much-needed clarity on the future direction of the British rail industry. Contradicting much of the recent industry 'chatter', the Transport Secretary confirmed that Great British Railways (GBR) is not dead but remains alive and well. However, he stressed it will be a 'guiding mind' rather than the all-powerful 'controlling mind' some had feared.

When they eventually arrive at their office to start work, the 'guiding minds' will face an unenviable in-tray from day one. A non-exhaustive list of urgent issues ranges from industrial relations to low morale, climate change, securing ongoing investment and addressing the gaping hole left in the railway's finances by post-Covid commuting habits.

The current difficulties across the British rail industry suggest the prevailing short-termism will not be able to contribute significantly in shaping an effective solution. The traditional relationships between operators, infrastructure managers, the Department for Transport, suppliers, contractors and other stakeholders are unlikely to be capable of delivering the change required to ensure that railways play the central role required of them in delivering modal shift towards Net Zero by 2050.

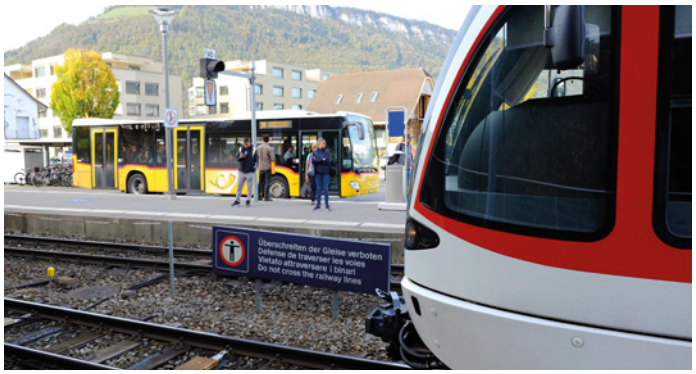
So what measures could the 'guiding mind' adopt to help the industry pull together and create a viable long-term recovery plan?

SMA, a Swiss company delivering consultancy and software to optimise railway planning and operations, believes lessons learned elsewhere in Europe could bring huge benefits to GBR and the way Britain's rail network is planned, specified and operated.

'Rather than seeing the public timetable as merely the end product, what if we put the service offer – as the ultimate promise to the end customer – at the heart of the decision-making process instead?' says SMA Chief Executive Officer Eric Cosandey.

'The desire to improve system performance, the goal of creating an enduring strong role for the railway in personal mobility and integrated public transport, the associated ambitious investment programmes and their supplier networks could all benefit from this new approach.'

Driving for strong performance: having given the 'right away', the conductor of a lunchtime IR9 train from Luzern to Zurich Airport boards his train ready for departure on 25 October 2022. Luzern to Zurich enjoys a half-hourly frequency of high-quality double-deck SBB trains which have to be carefully threaded through several 'pinch points', including a long single-track tunnel. Ben Jones



Integration: over the last four decades, local and national governments in Switzerland have worked with public transport authorities and operators to develop a highly integrated timetable that provides slick and reliable connections between trains, buses, trams, boats and even cable cars. On 25 October 2022 a Swiss Post bus connects with a Zentralbahn metre-gauge EMU at Stans, near Luzern. Ben Jones

This approach is well established in Switzerland, where upstream infrastructure and timetable planning looks 15 to 20 years ahead. But perhaps a more appropriate example in terms of network size and complexity is being developed in Germany by the Ministry as part of work to establish the Deutschlandtakt nationwide clockface timetable as a means to an end for a long-term infrastructure development programme (p78, November 2020 issue).

SERVICE DRIVEN

Deutschlandtakt is inspired by the institutional tools used for the development of the Swiss railway network, which has benefited from long-term 'service driven' infrastructure development since 1987.

It is the first milestone towards two related processes – the derivation and planning of infrastructure upgrades and equipment required and the detailed planning of capacity by German infrastructure manager DB Netz with a view to allocating capacity.

The first process typically requires the careful planning of service intentions (routes, stopping patterns, frequencies and connections) and concept timetabling taking account of planned rolling stock, infrastructure and equipment performance such as signalling.

The resulting concept timetable is a translation of service intentions to meet expected demand at national level. It determines the functional requirements for infrastructure and rolling stock and helps to define a development strategy, including how it should be phased.

Based on forecasts of future transport demand, the approach uses a conceptual timetable, accurate to the minute, to build an 'upstream' model of network capacity and create a set of pre-constructed paths responding to market needs. It also acts as a common platform for stakeholders of the system (infrastructure managers, train operators, local and national governments) to communicate on the issues of capacity and infrastructure requirements related to the market needs.

Mr Cosandey explains: 'This approach is the logical next step from "manufacturing" to "industrialisation" in the design of a railway system. It brings much-needed transparency in the complex planning process between train operators and infrastructure managers, which in turn can be used to set the structures and the rules of a competitive market environment, where that exists or is seen as a desirable ambition.'

LIBERALISED

At first glance this change from a 'market economy' to a 'planned economy' may seem incompatible with Mr Harper's recent restating of his desire to increase private sector involvement in operating Britain's passenger trains. However, SMA believes its methodology could actually promote competition in the liberalised framework favoured by the current Government and its predecessors.

Using a 'path catalogue' as a means to an end could promote and facilitate liberalisation. Mr Cosandey explains: 'For example, in Switzerland the process accommodates more than 50 train companies and myriad open access freight operators on international routes.

'Indeed, if "operator neutral" train paths were sold from a catalogue in the framework of an organised and optimised marketplace for capacity, it could even enhance the attractiveness of services. Overall, it

should favour competitive behaviour and bring positive consequences for the whole industry. It's a shop window for capacity.

'It's no coincidence that Switzerland enjoys the highest infrastructure usage (train kilometres / line kilometres) and the highest figures in terms of passengers per train kilometre in Europe. This planning methodology has been central to creating a more efficient, better-used railway.'

In Germany, open access operator Flixtrain is reported to be a supporter of the Deutschlandtakt process as it provides a basis for its investment. Frederik Ropelius, Director at SMA, adds: 'Initially wary that the process was purely for the benefit of Deutsche Bahn (DB), open access operators now understand that long-term stability of paths and schedules means they can focus on growing their businesses through marketing.'

Mr Cosandey continues: 'Railways must be able to develop their business model and build scenarios. A scenario-based approach involves modelling work. In generic terms, modelling can be considered as the rationalisation and reduction of the complexity of a system with the aim of better understanding it, and as a result of this modelling process it becomes possible to predict the behaviour of the system.'

Better strategic planning can enhance system integration, allow stakeholders to evaluate different service concepts and identify associated infrastructure and equipment to improve performance. Other benefits include the possibility to phase infrastructure/equipment investment or delivery and demonstrate affordability and deliverability of the whole network – a valuable tool when Treasury is focused on reducing transport spending.

Having a set of agreed goals could help train operators make more informed decisions when purchasing rolling stock. When a 'path catalogue' is established, it creates a framework for the minimum number of slots each day and the ideal performance characteristics of trains to maximise line capacity. Any train that doesn't comply with those characteristics could be wasting valuable slots, which, in turn, is detrimental for the overall capacity of the system.

Having that stability helps public and private investors plan their spending too, as it provides a basis for investment in new long-term rolling stock – a complete contrast to the short-termism we currently suffer in the UK.

LONG-TERM APPROACH

Federal Switzerland, with its influential Cantons and a Federal Office of Transport (FOT) as the real catalyst between public authorities and infrastructure managers, is famous for its ability to find workable compromises. Is that transferable to Britain, where the approach is often more confrontational?

Diego D'Elia, UK Region Manager at SMA, says: 'We believe these methods are transposable to the UK, but this kind of planning requires real commitment from all parties. A common understanding of needs must be built and all stakeholders, industry and political, have to work together and that cannot be taken for granted.

'But it's important to accept that it is a process – not a single shot. Time is needed to bring everyone in, but once they see the benefits the process can bring, reservations can be overcome.'

Mr Cosandey adds: 'A change like this can't be made overnight. In railway terms, 2030 is tomorrow, so service levels and infrastructure planning have to be phased in over 15 to 20 years. Setting an agreed strategic horizon like that doesn't stop anyone achieving intermediate goals, as long as they are compatible and aligned with the long-term development path. New ideas can pop up too – it's an iterative, open, round table process.

'Swiss service quality today is the result of the quality of planning five, 10 or even 20 years ago. It's not rocket science, it's about putting people at the same table and putting the service plan at the centre of all discussions.

'Switzerland is proving every day that planning 15 to 20 years ahead is possible and that planning breeds efficiency. Central planning is required to help efficiency and very long-term planning. There's still room for commercial enterprise within that framework. In fact, in terms of market liberalisation, you will always be behind demand if the infrastructure is not suitable for everyone that wants to use it.'

Echoing the canny commercial approach of Britain's Southern and Metropolitan Railways in the 20th century, Swiss authorities have even used the planning process to stimulate economic and property development.

At this historical turning point for Britain's railways, who has the vision to seize the opportunities offered by these methods? In theory it should now fall to GBR to use its power and position between the DfT, Network Rail and train operators to champion a more strategic approach, developing a transparent, long-term and inclusive process to develop and revive Britain's troubled rail network.