

Cohesive

Time to Make Tracks as Rail Reaches ‘Critical Crossroads’

In 2021, a new body – ‘a single guiding mind’ – was announced with fanfare as part of a reform of Britain’s railways. When, one year later, the establishment of the body, **Great British Railways (GBR)**, was put on hold, the irony was not lost.

Delays – along with strikes, a lack of reliability and poor standards of service – are regarded as common features by rail passengers on Britain’s rail network (the oldest in the world) and something they are resigned to. The Government’s **rail factsheet** shows that, in 2022-23, the percentage of punctual trains stood at just 67 percent.

As the headlines around GBR (now in transition phase) and its merits continue, the core challenges faced by train operators of ageing infrastructure, falling fare revenue, overcrowded trains and short-term financial windows remain. So how do we get rail back on track?

How Data and Digital Technologies Can Drive Forward Rail

One important contributor to these challenges will be the advancement of the sector’s digital transition. As in other sectors, the benefits to be gained from making use of modern technology and what it has to offer are significant: increased volume of trains, better reliability and improved safety.

But, while examples of successful digitalisation in rail, in the UK and globally, are growing, full digitalisation is some way off.

The benefits to be gained from adopting digital solutions, the blockers and the steps needed to speed up the pace of the transition were comprehensively detailed in a report last year from the **Rail Industry Association (RIA)** – the UK rail supplier body.

In its **Data and Digital Technologies in Rail** paper it called the early 2020s a “critical crossroads” for the UK rail industry, citing wide societal and behavioural changes, including those imparted by COVID19, the proposed formation of Great British Railways and political shifts.

The report, which is very much worth reading in full, provides a well-considered view of why quicker adoption of digital is needed in rail, what the current blockers are and how to overcome them.

“While working on our Railway Innovation Strategy last year,” the group writes, “it became clear that many innovations rely on the availability of good quality data, people who understand how to utilise this data, and organisations that enable the use of data and digital technologies.”

Its recommendations include: more collaboration and sharing of best practice across the industry, clear leadership of the digital transition and a cross-industry drive to ensure employees are armed with the right skills for the digital world.

The Transpennine Twin

It also includes case studies which showcase the benefits that digital approaches in rail project delivery, operations and maintenance are already generating. These include the Transpennine Route Upgrade where

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Bentley’s iTwin platform was selected as a user-friendly solution to connect the volumes of data being used and procured on the programme and make it accessible to the entire team.

Use of the platform, the programme has reported, improved information accessibility by 40 percent, saving more than 20,000 hours and an estimated £1 million in the first six months of implementation. The platform has supported better engineering decisions and delivery of safer, more reliable and more sustainable infrastructure.

HS2’s digital twin, which is being developed using **Cohesive DataConnect** is also referenced in the report with the “high level organisation[al] commitment” to data on the programme commended.

In partnership with HS2 Ltd, we have established what is known as its ‘Visualisation Hub’, (often shortened to VisHub) – a secure platform which connects the vast realms of complex and disparate datasets, such as GIS, BIM, CAD models, asset, safety, carbon and project controls data, being created and procured on the programme.

HS2’s VisHub, and the data intelligence and analytic capability it provides, is supporting enhanced communication and understanding among the HS2 teams and its stakeholders. It is central to processes such as design reviews and progressive assurance, as well as to engaging with stakeholders about planned activities.

Users report finding trusted information in seconds, in searches that would previously have taken hours manually.

The VisHub is the first stage in HS2’s vision to build a ‘digital twin’ of the railway – a virtual replica of the physical railway and how it functions as a system of interconnected systems.

Getting Going on the Journey

So where do individual rail organisations get started as they attempt to modernise their approaches and unlock the benefits of today’s technologies?

Key areas to consider and questions to ask are these:

1. What insights do I need in order to deliver my objectives, e.g. a reliable, good quality service? What datasets do I need to integrate to get these insights?
2. Can I be confident my data can be trusted?
3. How do I make it easy for people in my business to find all the trusted data they need to support their decision making?

Consider the changes in organisation, behaviour and processes required to derive the full value from investments in digitalising your business. The transition needs to be worked through as an organisational change, not simply an investment in some new technology.

Building the case for a ‘big bang’ digital transformation programme is difficult and risky. Instead, think about initial projects you might want to introduce as ‘experiments’ to provide you with evidence of the impacts that you can achieve.

Grappling with these sorts of questions, probing the possibilities and understanding what your organisation stands to gain from a digital approach is key.

These are exciting times in our sector, with so many ideas coming down the tracks. Let’s seize the initiative and make the railway’s digital transition a resounding success.

To find out how Cohesive can support your implementation of new technologies as well as the ‘people’ and change aspects of digital transformation, please contact andy.stephens@cohesivegroup.com

