

Tackling the technical strategy challenge

“The rail industry needs to act now to secure a sustainable future and long term value for money.”

The railway needs an up-to-date technical strategy to support its business objectives. This document takes stock of where we are and seeks senior level engagement in forming and developing that technical strategy.



Steve Yianni

Chair, Technical Strategy Advisory Group



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Rail plays an essential role in driving sustainable economic growth, providing access for passengers into and between the major economic centres and fulfilling a vital position in the supply chain to get goods to market. Having the right technology at the right time to meet this role is an essential element of our success and our aim in TSAG is to provide industry leadership by anticipating these needs and securing development and research to enable our industry to achieve these goals.

But the cost of the GB railway system is unsustainable. So we also recognise the immediate need to reduce the £6billion annual 'direct debit' to the 'public purse' and we have a keen eye to technology interventions that reduce our cost base.

At the same time, there is pressure on us as an industry to deliver more. The national rail network is central to the mechanics of the British economy and so crucial to the country's short term recovery and long term competitiveness. We carry 3 million passengers per day, 450,000 of them commuters in the morning peak. Each day, 2 million people either begin or end their journey in London, and 200,000 tonnes of freight are carried. The network as a whole sees over 1.2 billion passengers a year. There's a demand to become more sustainable and a need to handle increasingly stringent environmental constraints. Further, there is an anticipated rise in demand for higher quality and more economic rail travel for passengers and freight use.

The railway desperately needs a systems approach and strategic planning to realise its full potential. Railway assets generally have long payback periods so we can't rely on being able to change things quickly. The railway industry needs to start thinking now about the right technology and value-for-money schemes and associated incentives on a 30 year horizon, and not just the next 5 year control period.

The Technical Strategy Advisory Group (TSAG) has cross-industry representation from infrastructure, passenger and freight operation, rolling stock, RSSB, Transport Scotland – an agency of the Scottish Government, Department for Transport and the Office of Rail Regulation. Together we have illustrated this 30-year value-for-money challenge, of which captains of industry need to be aware.

TSAG's 30 year challenges
Cost: Halve the cost of rail operations
Capacity: Double network capacity
Carbon: Halve the industry's carbon footprint
Customer: Increase customer satisfaction to 99%

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Competitiveness:
GB rail as part of the fabric of economic success

TSAG's work complements and supports the work associated with 'Planning Ahead 2010' produced by Network Rail, ATOC and the Rail Freight Operators' Association.

TSAG sees these challenges as opportunities to change, enabling the rail industry to better meet the needs of its customers and society. Technology will help us reduce our cost base. Now is the time to invest energy and resources into understanding how we can achieve this, unblock complex cross industry issues, and bring new insights to the sustainability challenge. Without this, the economy will have the burden of a more expensive railway, which will at the very least hinder its ability to compete and grow. The environment in which we operate is one where sustainable affordability is key.

We have identified **five 'game changers'** which need to be researched and developed now so that decision makers in organisations can collectively identify and draw on the appropriate benefits and take technology decisions in a 30-year time frame.

- 1) Enable innovation, not re-invention:**
Systems leadership is key to innovation. Industry needs an incentive and a process to embrace the potential for improvement, without awkward technical, structural or cultural obstacles.
- 2) Establish next generation traffic management:**
Centralisation of rail traffic control into a single system or 'guiding mind' to optimise the network's capacity and increase customer satisfaction, reliability and safety. This will require the bringing together of commercially available systems and integrating them. Increases in rail's delivery potential will be reflected in revenue increases, income which might currently be out of reach through capacity constraints, while reducing operations costs through better management of the network, better utilisation and lower energy consumption.

3) Optimise energy strategy:

We must make savings on the railway's annual £500m traction energy bill through better exploitation of new and existing technology. Train regenerative braking is already in use on the network. This and other ideas need to be deployed further to make greater inroads into the collective traction energy bill.

4) Build in whole system reliability:

A business case for a whole system strategic approach to reliability is needed. This would help reduce the £600m annual cost of delays and a host of other related business performance costs in agreeing delay claims. Technology can help deliver better asset management, via deployments such as remote condition monitoring and systems for sharing performance data.

5) Provide smarter data and communications:

We promote a strategy for rail mobile communications which relies on commercially available, off-the-shelf systems to provide enhanced information in line with the needs of both front-line railway operations and customers.

TSAG works with the System Interface Committees and other cross-industry groups in sponsoring research in an RSSB-managed programme. The research covers all these areas to enable industry to make the right call at the right time and enables research institutions to clearly see what the industry needs and have confidence that their work will be applied and deliver benefit. The result of this work will be decisions grounded in evidence on how technology is applied to meet defined future requirements.

We run the risk of substantial unnecessary costs which will be incurred if we don't begin securing the knowledge now, and embedding it into our planning. TSAG has contributed to the production of the 'Planning Ahead 2010' document produced by the rail industry, which acknowledges the role of technology in achieving the plans for rail over the next 25 years. This forms part of the process that will generate the next industry strategic business plan and the Rail Technical Strategy will be developed to support this.

TSAG is supporting basic and applied research and the translation of innovative technical solutions into world-class products. This is part of the essential investment in the science base, engineering and operational capabilities of British industry. It will help drive the future growth of the rail sector and through that, support UK economic growth and exports.

We now need to sense-check these aspirations in a consultation, to inform the next Rail Technical Strategy, due to be published in 2012, which will be owned by the industry. This is your opportunity to help shape future technical directions, and we welcome your views.

Please send your reply by email to: tsagconsultation2010@rssb.co.uk or by post to:

Martin Brennan, RSSB, Block 2 Angel Square, 1 Torrens Street, London, EC1V 1NY by 17 December 2010.

I look forward to hearing from you and your organisations on where we go from here and to tackling the strategy challenge with my colleagues on TSAG.

Steve Yianni

Chair, Technical Strategy Advisory Group

A more detailed review of the challenges outlined here are described in ***Shaping the 30-year Rail Technical Strategy***, available to download from www.futurerailway.org and as hard copy, email tsagconsultation2010@rssb.co.uk



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About TSAG

The Technical Strategy Advisory Group (TSAG) is a cross-industry expert body, facilitated by RSSB, and made up of senior executive staff, charged with developing and championing implementation of the strategy, supporting communication, managing strategic research, identifying opportunities, barriers and actions.