

HIGH SPEED RAIL



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The case for the building of a high speed rail (HSR) network has been promoted in many quarters. The unquestionable importance of the project to our national economy and, in particular, to the regional economies through which it would travel, inspired a group of us to carry out some research.

Why we are allowing ourselves to blindly fall behind our international competitors in this area is a question of deep concern. Not only against our European counterparts, but also against the developing world, we are lagging behind in the realisation of any manageable or achievable solution. Britain lead the world in the development of

rail travel during the last industrial revolution and yet today we seem to have become complacent in our outlook and as we sit, doing up our shoe laces, other less developed countries are continuing to race ahead of us. My concern is rooted, not in patriotic fervour, but in an overriding concern that inaction in this area will result in deterioration of our economic development at large, a fear that in this economic climate is all the more relevant.

In light of the recent budget announcements, previous proposals are financially unfeasible. If we are ever to see HSR come to fruition, we need to apply a fresh, innovative strategy to our approach. What we propose is “HSR Lite” – a low calorie version of what has previously been proposed by HS2. The implementation of HSR is so central to the continued development of our economy that we must initiate a strategy that is fundable within the context of our tightened national purse strings.

Our economic prosperity is reliant on efficient accessibility to the nation’s cities; it is clear that the existing UK railway system is untenable. It is already grossly overburdened, with railways now carrying 1.3 billion people a year, more than at any time since 1946. In the harsh light of this figure, it is abundantly clear that the UK railways will be in crisis by 2020 unless measures are taken.

A HSR network would alleviate the problem by increasing capacity through the new lines and releasing capacity on the ‘classic’ rail network. HSR would drive major economic and social change,

transform connectivity between British businesses and their customers, enable faster journey times and liberate work time. It would vastly improve access to European markets, remove pressures on domestic air travel, reduce the damaging environmental impact whilst lessening road traffic.

In the pursuit of all these advantages we lag far behind our global competitors. This can partly be attributed to the cost of procuring railway infrastructure in Britain being estimated at as much as three times higher than comparable projects in continental Europe. A recent estimate of overall cost from Network Rail is a daunting £34bn. To put this figure in perspective, it would finance the 2012 Olympics more than three times over. Reasons for this disparity include the UK’s non-standard technical specifications, different operating standards and safety requirements, tortuous planning requirements, complex budgetary and procurement processes. The cost gap between the UK and our European counterparts must be reduced if we are to initiate a successful venture. Financing a venture of this magnitude will only be possible if the government reconsiders the excessively stringent regulations (outlined above), aligning our estimated costs with those in Europe and internationally.

Contrary to other research projects, we concluded that a critical feature of a successful HSR network is that it needs to be national in its scale and dedicated to high speed trains only. European experience suggests HSR procurement, project management and construction operates most

efficiently and effectively on stretches of 100 to 200 kilometres. Consequently, we believe that progress towards an overall vision should emulate the development of motorways, conceived as a network but executed little by little over a significant number of years. The HSR programme should be divided into a series of staged and politically, managerially and financially deliverable projects. Our initial aim should be to identify a strategy that delivers the maximum value for that spend and is safe, but simple and direct in design and execution. Decisions made now will have repercussions on domestic travel for generations to come.

The first elements of a new HSR network could provide an effective and efficient link between London, Birmingham and Manchester without venturing into the cities themselves. More than half the cost of the Channel Tunnel Rail Link, and much of the planning effort, arose from the final approach to central London and St Pancras because of the extensive tunnelling and other engineering work involved. Why then, in developing HSR, is it initially essential to build into city centres? Even if traditional appraisal methodologies show that this maximises benefits, a detailed financial analysis will give very different metrics. The last time we addressed the rail network was in the Victorian times, during which accessibility to stations was paramount. However, we no longer rely on horse drawn carriage for transport to and from the station and nor do the majority of commuters live in city centres. It is obvious, with this rationale



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in mind, that the centrality of stations is no longer crucially important. And so the best value for money during the initial development will be achieved by selecting segments with lower costs per kilometre that are outside the cities, which represent the potential for the biggest time savings.

A possible route runs from a London terminus at Old Oak Common on the new Crossrail route, which links Heathrow to the West and Bond Street and Canary Wharf to the East. The Old Oak Common terminus would be convenient for most commuters - only two stops from the West End and seven from the City. Similarly, the northward HSR route would be to Birmingham Airport and then Manchester Airport where linkages with city centres already exist.

The distance involved in this route is about 300km, suitable for letting as two projects in line with the staging principles outlined above. Major construction companies estimate that a reasonable cost for continental rail projects is €20m per kilometre. On this basis, the cost of a route from London to Manchester is less than £6bn, a considerable reduction on previous estimations.

Stations and related facilities should initially be limited in number and designed and built as simply as possible, with essential facilities only. Ancillary development should not be seen as part of the programme but to be added as investors demand.

Finally, it is not essential to integrate the HSR network with the classic network. A High Speed Network can be developed quite separately, reducing cost and facilitating the adoption of more cost-effective technical specifications. These four key principles of staging, selection for maximum VFM, simplicity and separation could transform what feels overwhelmingly challenging as a comprehensive, integrated network into something that looks and is achievable.

The critical point is that a start could be made along the lines proposed, success demonstrated, confidence reinforced and a great platform created for future stages. The economic imperative is clear and the social benefits beckon. Britain must create a high speed rail network.

It is our contention first that high cost, and the appearance of high cost, must be mitigated by cost improvement measures and a critical approach to key assumptions, and secondly that a start should be made as soon as possible, however modest, as the beginning of a staged programme.

The model outlined above is achievable. You can argue that it is un-ambitious; but rather un-ambitious and achievable than overambitious and unfeasible. This prospect is a great deal more positive than the probable alternative if a whole network approach were taken: endless deliberation, indecision, intimidating cost and complexity, overruns and reviews. We have

succeeded with the Tunnel Link and mindful of our astonishing, proud railway heritage, we should not hesitate to take the next manageable step. The benefits could be substantial; failure to embrace the HSR challenge could be economically damaging.

THE QUESTION OF FUNDING:

In terms of funding, there is a good deal of information to hand about approaches adopted around the world in developing HSR. What unites them is the major role played in all cases by the state. But this is manifested in different ways. There are basically three potential funding approaches:

The first and the simplest conceptually, is the *public funding* model. Here the public sector acts as both procurer and deliverer, usually working through a state railway company. The taxpayer is both funder and financier.

The second is the project *finance/PPP* model. The public sector acts as facilitator, letting a long term concession to a private sector consortium. The funding consortium raises debt and equity availability fee from government once the infrastructure is complete and operating.

The third is the *rail agency* model under which the public sector usually establishes a dedicated delivery organisation, at arm's length and separate from the state owned railway company – ensuring some independence from government control and protection from political change. Pay back is similar to the PPP model, but the funding is at least partly in the public sector.

The most common model has been the public funding model. For example, both Japan

and France embarked on their high speed rail developments on that basis. Both supplemented central state funding with contributions from regional and local government, partly to spread the burden and partly to bind in local support. For the most recent additions to its high speed network, France has switched to the PPP model.

Realistically, given the current complexity of issues surrounding government debt, the public funding model appears unattractive. Even without the recent crisis, the continued centralised approach seems at odds with the expressed wish to open up funding to wider ranges of interests and regional groups. Most importantly, the advantage of working with a strong private sector partnership is that financial discipline and effective cost control are rigorously imposed.

The Project funding/PPP model provides such discipline and transfers the financial risks of construction or maintenance overrun to the private sector, but at a price, and the burden on public finances is mitigated significantly by being spread over time (thirty years or more). The main constraint is the balance sheet capacity of private sector contractors to take on construction risk and the need for detailed ex ante contracts to guarantee returns.

Although the PPP model might be made to work with segmented and phased stages, our view is that the rail agency model probably offers the best chances of delivering a successful programme. Its crucial advantages, arising from risk sharing, are the lower cost of finance and the agency's ability to retain control and flexibility through relatively simple contracting arrangements.