SURVEY Industry Watch

Cutting times and enhancing integration

High speed has been a key driver in raising rail's public profile, but what should be the top priorities to steer future investment at a time of limited public and private funding.

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High speed rail has been a resounding success, both economically and politically, with new lines opening in more and more countries in the half century since the Tokaido Shinkansen was inaugurated in October 1964.

Trains are now operating at 250 km/h or more in 13 countries, over a cumulative network totalling almost 30 000 km, according to Murray Hughes' definitive book *The Second Age of Rail*. Over half of this is in China, which today has more than 11 000 high speed train cars, more than twice as many as either Japan or France according to the UNIFE World Rail Market Study. Further projects are in the pipeline in countries such as Iran (p52), Malaysia, Saudi Arabia and Turkey.

There are significant arguments in favour of high speed rail. A UIC study found that energy efficiency per passenger-km is significantly better than that of private cars or planes (Fig 1), while electric traction means there are no direct carbon emissions. Land use is about one third of that required for a motorway with a similar capacity.

But the investment can be huge. Depending on the topography, construction of a new line can cost more than €30m per km. The capital cost of a trainset with 300 to 400 seats typically lies between €20m and €30m, with maintenance costs of about €1m a year.

So the available public and private funding needs to be carefully targeted at the right markets. We asked our panel of senior experts what they saw as the top three priorities that should shape future high speed investment.

Not everyone picked three answers, but the clear priority was — not surprisingly — to make rail more competitive by reducing journey times between key cities. Statistical evidence from around the world has clearly demonstrated that travel time is a key driver of market share. Air travel has been largely displaced from short-haul routes such as Paris – Lyon or Paris – Brussels, and has lost a considerable share of the market for longer connections like Seoul – Busan or Beijing – Nanjing (Fig 2).

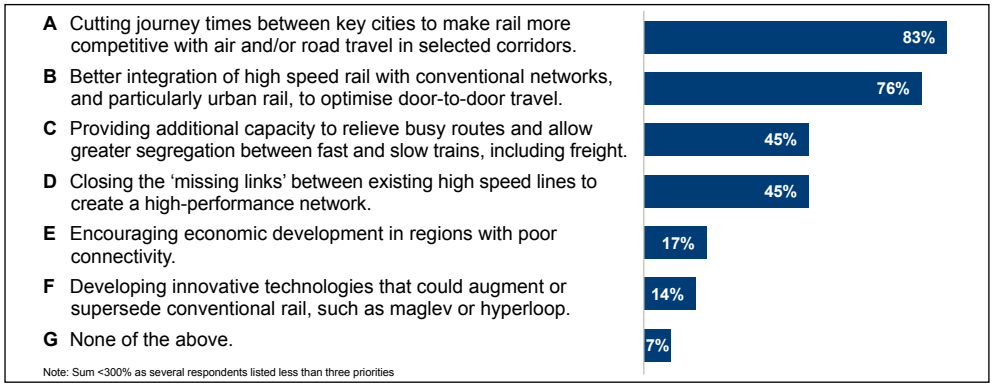
Of course, high speed rail can only compete in a door-to-door travel market if there is convenient access at each end. Hence our panel's second priority is better integration with conventional rail networks and urban public transport. Steps are needed to speed up connecting trains, and improve the quality of the interchange process, including seamless ticketing and real-time information covering municipal, regional and long-distance operators.

The third place votes were split equally between two objectives. One group identified the need for additional capacity to permit greater segregation between fast and slow trains — which is particularly important where conventional rail networks are becoming saturated. A similar number felt the focus should be on closing the gaps between existing high speed lines. Both are important, but the priorities are clearly influenced by the local transport landscape.

There was limited support for using high speed rail to encourage economic development in regions with poor connectivity. Even fewer people felt that scarce investment should be allocated to the development of innovative technologies such as maglev or hyperloop.

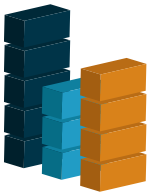
Our panel's choices suggest that high speed rail still has room to grow, eventually leading to a dense network connecting major cities and conurbations, well integrated with feeder services to facilitate fast, convenient and environmentally-friendly door-to-door travel.

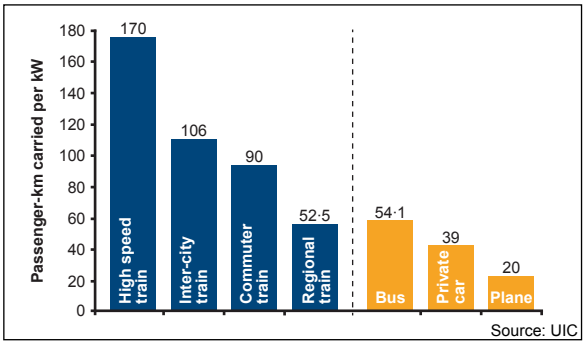
As UNIFE Director General Philippe Citroën says, 'it is good news that high speed rail is widely recognised as an environmentally-friendly alternative to road or air. However, rail's environmental credentials alone are not enough to drive modal shift; passengers are looking for affordability and a strong customer focus. The European rail industry is committed to providing the best possible products and technology to support the further development of high speed all over the world.' ■



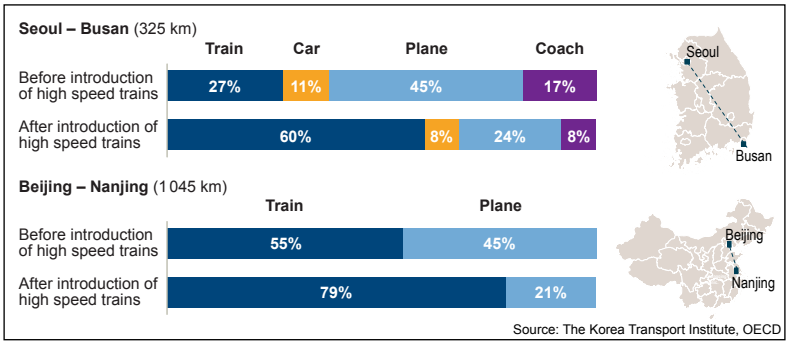
To find out more about the survey and apply to join our panel, visit the RSIW website at: **www.railsupplyindustrywatch.com**

RAIL SUPPLY INDUSTRY WATCH





Below: Fig 1. Relative energy efficiency per passenger-km for different modes.



Below right: Fig 2. Rail's market share has increased on selected routes following the opening of high speed lines.