

Mobility post-Covid: An opportunity for railways

Lessons learned and recommendations
to give railways a central role in future
travel choices



INTERNATIONAL UNION
OF RAILWAYS



The impact of the Covid-19 pandemic has created fertile ground for rail transport development worldwide

The Covid-19 crisis has significantly reduced travel in much of the world due to numerous lockdowns and other restrictions on movement. Rail users and stakeholders have been forced to adapt and all types of transport – both local and long-distance – have been disrupted. Rail has demonstrated particular resilience in these difficult circumstances, proving itself to be an essential service for society that enables key workers to get to work and gets goods to where they need to be.

Although the long-term impact on transport use and the economy remains uncertain, the crisis has accelerated existing basic trends such as working from home, environmental concerns and public support for infrastructure. In the long term, beyond the post-Covid recovery period, these disruptions are an opportunity to be seized for rail transport, provided that new or adapted strategies are developed and implemented without delay. Compared with other modes of transport, which are undergoing profound changes, rail has the benefit of an unprecedented window of opportunity to strengthen its competitiveness and increase its modal share.

This study aims to provide the keys to understanding this ‘new normal’ for passenger rail transport, both long and short-distance, and identify how best to act now in order to be prepared by providing strategic recommendations for rail stakeholders operating in all regions.

The ‘Mobility post-Covid: An opportunity for railways’ study was conducted in the first half of 2021 by Roland Berger on behalf of UIC in collaboration with its members and informed by discussions with sector representatives.

1. Mobility predictions for 2025 with a focus on five megatrends accelerated by the crisis

While our world prior to the dramatic developments of February 2020 was characterised by ongoing globalisation and unrestricted transport, in the future, the 'new normal' will involve dealing with uncertain economic and health conditions. We can expect a transition phase at least until mid-2022, progressing at different rates in different regions depending mainly on vaccination rates, economic recovery, and the evolution of the pandemic itself.

Across the world, the future of mobility is taking shape as a continuation of basic trends in mobility, which were reinforced during the Covid-19 crisis and which allow us to project ourselves into the 'new normal'.

Megatrend 1

Mobility behaviour will continue to evolve after the shock of remote working

The emergence of new ways of working such as increased remote working and a decrease in business travel have transformed mobility behaviour, which may result in a reduction in urban density in Western countries. Accentuated by the pandemic, health and environmental concerns have, in parallel, boosted soft mobility modes.

KEY FIGURES

REMOTE WORKING



Future of Workforce Pulse Report, Upwork, 2021



EXPECTED DECREASE IN THE NUMBER OF BUSINESS TRIPS PER PERSON



Long-Distance Mobility Study, Roland Berger, 2021

A basic trend accelerated significantly by Covid-19, with no return to 'normal' for professional travel

Passenger mistrust of public transport can be expected to diminish in the years to come, and leisure travel should bounce back quickly from 2022 onwards once health-related restrictions are lifted. **But recovery of business travel will be more gradual** and will ultimately return to a level below that of 2019. The time required to arrive at the 'new normal' will vary depending on the region, vaccination levels and implementation of quarantines for overseas travellers.

Megatrend 2

Secured during the crisis, public financing of rail can be expected to be maintained after Covid-19

The trend toward public financing in rail has not been challenged by the Covid-19 crisis. New programmes have been rolled out to offset reduced traffic in 2020 and 2021 and to invest in future rail capacity, particularly in order to anticipate mobility needs, encourage a shift to rail from other transport modes and support an important professional stream in terms of economic activity.

Subsidy levels are likely to be maintained at a high level for many years, thanks in particular to recovery plans focusing predominantly on green transport solutions.

While no rail projects have been cancelled due to the crisis, the restrictions placed on air transport for health or environmental reasons may reinforce the legitimacy of certain rail projects in the coming years. However, the air transport sector will likely enjoy public support after the crisis.

KEY FIGURES

CHINA'S NEW RAIL LINE AMBITIONS

by the end of 2035

200,000 km

vs. **141,400 km**

in 2020



USD ~47 bn

amount of investment in fixed assets
in the railways in the first half of 2020

+1.2% compared with 2019

[China State Railway Group, Reuters](#)

SUPPORT FOR RAILWAY INFRASTRUCTURE PROJECTS ON THE CORE TRANS-EUROPEAN TRANSPORT NETWORK (TEN-T)

European Union



EUR 1.6 bn

55 projects, including Rail Baltica and
the railway line between Lyon and Turin

[European Commission, 2020, Boosting the EU's Green Recovery: EU invests over €2 billion in 140 key transport projects to jump start the economy](#)

Megatrend 3

Passengers' environmental concerns are conducive to a central role for rail in mobility

A preference for more environmentally friendly transport modes due to concerns in relation to the environmental and societal impact of travel continued to increase during the crisis, with the worrying situation reinforcing individuals' environmental conscience.

POST-COVID/2025 PREDICTIONS

Consumers' environmental and societal concerns will have a major effect on mobility worldwide, with a positive impact on rail transport. Rail services will be developed to counterbalance air transport services with greater numbers of night trains or high-speed trains. In urban areas, public transport and soft mobility services should continue to develop, gradually replacing urban travel in private cars.

KEY FIGURES

FLIGHT SHAME



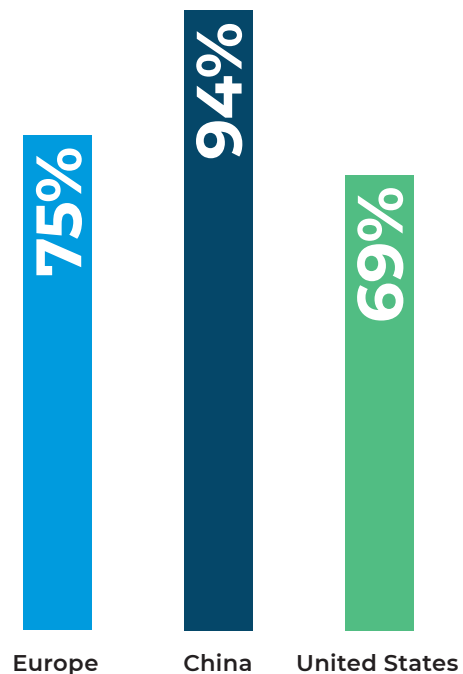
2017

emergence of Flygskam in Sweden

CLIMATE CHANGE



Percentage of people who intended to travel less by air for their holidays in 2020 in order to contribute to the fight against climate change



Megatrend 4

Liberalisation of the EU rail market has slowed down but is not going to stop

The pandemic has slowed large-scale liberalisation of passenger rail markets, primarily in European countries. Reduced traffic has made entry into the market less viable and more uncertain for new players.

POST-COVID/2025 PREDICTIONS

Although rail transport liberalisation has slowed in the European Union, a return to normal by 2025 can be expected. With infrastructure strengthened both in terms of volume and quality, rail traffic can be expected to increase in the long term, which should promote the emergence of healthy competition between operators. If well organised, such competition often generates innovation and efficiency gains, which may translate into more attractive prices for users and a very substantial increase in rail modal share to the detriment of air travel.

Megatrend 5

Development of high-speed infrastructure will benefit from a change in perception, with air travel appealing less and less to passengers

On account of the diminishing appeal of air transport globally, the Covid-19 crisis has boosted the value of extending and modernising high-speed infrastructure.

KEY FIGURES

HIGH-SPEED RAILWAY LINES

15,000 km

of high-speed railway lines are currently being constructed worldwide



UIC High-Speed Atlas 2021

-3.5%

ESTIMATED DECREASE IN THE MODAL SHARE OF AIR TRANSPORT IN THE UNITED STATES FOR NATIONAL FLIGHTS BY 2025

Long-Distance Mobility Study, Roland Berger, 2021

POST-COVID/2025 PREDICTIONS

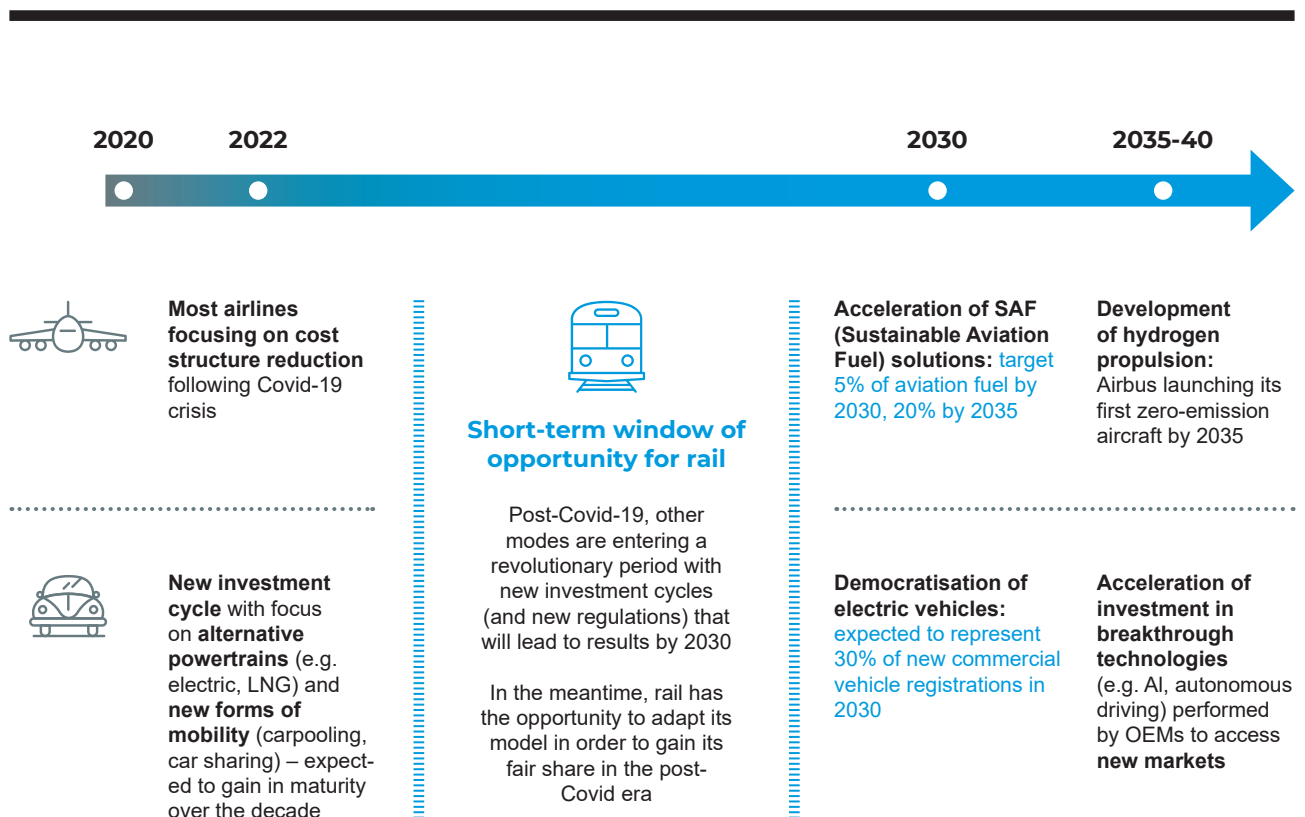
The development of high-speed lines throughout the world **can be expected to increase global demand** for mobility – adding these lines to national or local transport systems will multiply the number of transport solutions available to citizens. On the other hand, high-speed rail development continues to be hampered by significant costs (around 9 to 22 million euro per km in total costs). This trend can be expected to continue over time as many journeys made by road or by air are likely to be replaced by travel on high-speed rail lines. In addition, passengers will tend to accept longer journey times, encouraging the development of long high-speed lines.

2. Lessons to be learned by rail stakeholders in the 'new normal'

The rail sector already enjoys favourable conditions for winning market share during the recovery period. The other transport modes have entered into a critical period in which their models are being called entirely into question, with the first effects expected to emerge around 2030. The window of opportunity for rail is therefore relatively short.

Severely affected by the crisis, air transport stakeholders are actively reducing their cost structures and are preparing to resort to more Sustainable Aviation Fuels and to switch to green propulsion after 2035.

The automobile industry has already begun its environmental transition, with electric vehicles due to reach maturity in the coming decade and progressive installation of charging points.



2.1 STRATEGIC PRIORITIES TO INCREASE RAIL'S MODAL SHARE

The principal means of action required to take advantage of this window of opportunity will be aimed at securing and enlarging rail's scope of relevance: securing its modal share by capitalising on its main benefits – reliability and comfort – and enlarging it by dealing with rail's main weaknesses, e.g. perception of high prices, limited connections with other modes, etc.

Rail stakeholders should thus pursue **three key objectives** proactively and in parallel:

1 Improve the customer experience by adapting to new mobility and consumption behaviour and drawing on the benefits of rail in comparison to other transport modes.

2 Improve the economic equation of rail: optimise production costs across the entire system to enable lower prices for passengers, maintain profitability for operators and enable investment in order to prepare for the future while maintaining acceptable costs for all.

3 Improve environmental performance: while the road and air transport modes are currently facing increased scrutiny, environmental requirements for the railways can also be expected to increase over time.

2.2 RECOMMENDATIONS FOR RAIL STAKEHOLDERS

RAILWAY UNDERTAKINGS

Reinstall passengers' desire to use public transport in the short term, particularly rail transport, by raising passenger confidence with regard to sanitary safety (without altering the customer experience, particularly in terms of fluidity), service frequencies, quality, punctuality and reliability.

Adapt tariffs and prices for mainline, suburban and regional trains to take account of new behaviour with regard to mobility, e.g. new subscriptions adapted to passengers travelling twice a week, additional services to attract new customers, etc.

Adapt regional and urban services to respond to evolving customer expectations and to compete with other transport modes in areas in which they are more relevant at first glance.

Develop onboard services by focusing on rail's natural competitive advantage: suitable for business and leisure travel.

Develop intermodality by cooperating with airlines, road transport stakeholders (cars, rental, car-sharing), urban public transport and micromobility – both physically and digitally (e.g. reservations, ticketing).

Capitalise on digital capabilities to provide information more fluidly to passengers, e.g. apps providing information in real time.

Focus innovation on environmental transition:

- Phase out diesel traction in favour of electrification and hydrogen or battery trains.
- Capitalise on opportunities for energy efficiency in operations.

INFRASTRUCTURE MANAGERS

Invest in the development of new long-distance lines (e.g. in Central Europe, Asia, United States) to expand the overall service offering, as well as key hubs in the network which foster intermodality, e.g. rail infrastructure for freight in ports, and standards and procedures to encourage cross-border traffic (passenger and freight).

Improve communications and signalling to digitalise infrastructure by developing 5G and integrating artificial intelligence in order to optimise capacity.

Improve traffic management for enhanced service quality and greater flexibility due to greater capacity for digital automation.

Improve infrastructure's environmental performance:

- Hydrogen/green energy charging infrastructure: build hydrogen or battery charging infrastructure to ensure that trains work when lines are not electrified, and accelerate electrification on the network where necessary.
- Circular economy: incorporate the principles of the circular economy in upgrading and construction activities, including this aspect in contracts with suppliers.
- Promotion of renewable energy in the overall value chain, e.g. GO – guarantee of origin, PPA – power purchase agreement.

Optimise infrastructure use, for example by optimising maintenance to increase infrastructure availability at night or by developing long-distance freight trains (to support e-commerce growth in particular).

Invest in order to provide greater resilience to natural risks (in new technologies and artificial intelligence in particular), taking account of the prospect of increasingly frequent climate-related events due to global warming.

STATIONS

Improve intermodality conditions: infrastructure (soft mobility, flow management) and services (luggage, ticketing, etc.), between long-distance segments or between long- and short-distance segments and last-mile services.

Convert stations into environmentally friendly spaces (energy, materials, etc.): redesign spaces in stations to take account of new mobility behaviour, with workspaces and services, for example. Explore new opportunities to position the train station as a new urban centre.

Consider pricing mechanisms for businesses and services to exploit passenger flows as an asset while developing new sources of revenue.

Transform stations and their surroundings into **elements of urban development and planning (urban logistics, for example)**.

TRANSPORT AUTHORITIES

RAIL FINANCING

Support investment in infrastructure (e.g. communications/signalling, long-distance lines, new high-speed lines, station development) and new technologies and alternatively-powered vehicles.

Support mobility and railway undertakings – long-distance, night trains, regional and suburban lines – in order to improve rail's economic equation for passengers while maintaining cost levels acceptable for all.

RAIL ORGANISATION AND REGULATION

Promote intermodal cooperation: use incentives or regulatory measures to encourage coordination between transport modes.

Create the conditions for positive competition:

- Choose a suitable regulatory framework: open access where appropriate; otherwise PSOs or binational PSOs.
- Define the scope of PSOs so as to facilitate profitability for operators.
- Support initiatives aimed at facilitating access to essential facilities, information/data and rolling stock.

Improve data transparency with regard to passenger traffic, service levels, etc.

Environmental transparency: improve knowledge of the external effects of transport and their quantification, and improve fiscal policies dealing with such effects.

Develop a sector-wide approach that necessitates cooperation between operators, infrastructure managers, equipment manufacturers and public transport authorities in order to define railway systems that facilitate an expanded scope for the railways.

RAILWAY SYSTEM, MATERIAL AND EQUIPMENT SUPPLIERS

Focus on construction of equipment adapted to **evolving customer expectations and mobility behaviour** (e.g. the train as a workspace with greater comfort, better connectivity, etc.), particularly in a context in which other transport modes are investing in this area (e.g. driverless cars).

Develop **more environmentally friendly equipment and material** (rolling stock as well as the entire supply chain for rolling stock and infrastructure).

Improve manufacturing agility (e.g. by accelerating production cycles) and equipment upgradability so as to anticipate technological advances.

Develop research programmes **to construct and maintain high-speed lines at a lower cost** (e.g. through increased prefabrication of components).

Ensure technological convergence by applying international standards.

To consolidate its edge over other modes in the emerging paradigm, the railways of the future must take shape as from today

With the lockdown measures and travel restrictions implemented by governments, the Covid-19 crisis has sparked a debate on the concept of mobility and thus the very vocation of private and public transport. By putting the spotlight on the negative aspects of travel (drudgery and cost of certain journeys) and the opportunity to partially move away from these aspects, the crisis has also revealed the positive aspects of mobility, such as the fundamental need to travel, resilience and the economic and societal impact of the sector. The 'new normal' will take shape on the basis of trends that existed before Covid-19 and have been amplified and accelerated by the crisis. In this context – not necessarily a zero-sum game – rail appears to have natural advantages over other transport modes so that it can play a central role in future travel choices, in particular thanks to its low environmental footprint and its efficiency.

But this edge has yet to be translated into an actual increase in modal share and may be only temporary, as the other modes have already begun their own revolution. We cannot be passive with regard to the window of opportunity available to rail. Rather, all stakeholders in the sector must be called to action to develop the railways of the future, which will be based on continuous improvement of the customer experience, an optimised economic equation and superior environmental performance in comparison to other transport modes.

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UIC is the worldwide organisation for the promotion of rail transport at a global level and collaborative development of the railway system. It brings together some 200 members on all 5 continents, among them rail operators, infrastructure managers, railway service providers, etc. UIC maintains close cooperation links with all actors in the rail transport domain right around the world, including manufacturers, railway associations, public authorities and stakeholders in other domains and sectors whose experiences may be beneficial to rail development. The UIC's main tasks include understanding the business needs of the rail community, developing programmes of innovation to identify solutions to those needs and preparing and publishing a series of documents known as IRS that facilitate the implementation of the innovative solutions.

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