

Clear vision needed for rail to grow

The International Union of Railways (UIC) Future of Railways symposium offered a platform for global railway leaders to express their views on the future direction of the industry. **David Briginshaw** was among the attendees.

THE International Union of Railways (UIC) staged its future of railways symposium in Paris on November 30-December 1. This was the UIC's first event to combine speakers and delegates both in the UIC's conference hall and online. The event attracted 60 speakers from around the world and reached a large audience.

Mr François Davenne, the UIC's director general, set the scene for the symposium by highlighting that the Intergovernmental Panel on Climate Change's (IPCC) report sets out what needs to be done by 2050 to avert a climate catastrophe and what the world should be able to deliver by 2030. Davenne highlighted the UIC's Vision of Rail 2030 report published in November which sets out areas where rail can play a role in reducing carbon emissions:

- transforming cities and connecting communities
- energy, technology and innovation
- through seamless connections, and
- transforming the customer experience.

Davenne cited some examples of where rail is leading the way or already excels. "ATO is an important innovation," he told delegates, pointing out that ATO experiments are already underway in Europe, Russia and China. He also cited Switzerland which has achieved a highly interconnected public passenger transport network. Davenne said if US freight railways can achieve a 50% market share of freight traffic and Swiss operators a 30% share, it should be possible for other countries to increase freight traffic as well.

"We need a clear vision of how to decarbonise in the next 10 years," Davenne said. "How do we innovate using the same systems, and how do we improve services continuously to make them desirable for citizens?"

Mr Walter Goetz, head of cabinet with the European Commission (EC), pointed out that rail's share of passenger and freight traffic in the European Union (EU) is "below what we want to achieve." Goetz outlined the targets set by the EU to achieve modal shift:

- doubling high-speed traffic by 2030,

even though some member states are lagging behind

- increasing rail freight's market share to 30% by 2030, and
- making all transport travelling less than 500km carbon neutral.

"We have a political momentum which didn't exist before," Goetz told delegates. "We need rail in all its aspects."

"On December 14, we will present an action plan to boost cross-border and long-distance passenger rail with several initiatives to improve efficiency (p19). We want to use the lessons learnt from the Connecting Europe Express," he said holding up a copy of the November issue of IRJ which included a report on the train which visited 26 countries in 36 days. Our report (IRJ November p16) highlighted the capabilities and shortcomings of cross-border passenger rail.

"There is a huge window of opportunity for rail, but we have to deliver now," Goetz emphasised. "Eight years is not a lot of time to do the work especially for infrastructure."

Mr Michael Lemarchand, director of societal commitment and ecological transition with French National Railways (SNCF), emphasised the urgency of addressing the climate emergency. "Without swift and immediate actions, we will fail, which will have disastrous consequences," he said. "I am sorry to say that transport emissions are still rising. The climate emergency means we need to concentrate on technologies and systems which are available today, which means rail."

Lemarchand went on to outline SNCF's very ambitious objectives, including doubling freight and passenger traffic by 2030 and cutting greenhouse gas emissions by 30% by 2030 compared with 2015. "In France, 70% of people live within 5km of a station and 90% within 10km, which means inter-modality is not out of reach," he says. "For freight, we need to improve coordination with ports and inland waterways, and this is happening now."

"Investors should support member states massively as there is no better investment for society than rail."



Walter Goetz says rail's share of passenger and freight traffic in the European Union is below what the EU wants to achieve.

German Rail (DB) has similar objectives to increase freight by 70% and double passenger traffic. However, Ms Daniela Gerd tom Markotten, German Rail's (DB) board member for digitalisation, who joined DB from the automotive industry in September, says this won't happen by itself. "Our vision of rail in 2030 needs to be customisable and smart," she said. "We must use technology for the benefit of our customers. We need to use AI to run our trains more densely but also on time."

Mr Paul Hegge, director of public affairs and corporate social responsibility with Belgian freight operator Lineas, wants to see a change in outlook from infrastructure managers. "If operators succeed in making all the changes necessary, it won't be enough," he said. "Infrastructure managers have simply been managing the infrastructure, whereas their real mission in the 21st century should be to maximise the flow of people and goods on their networks. We need to ensure the infrastructure is sound and there is sufficient capacity. We need 700m-long freight trains in Europe by 2030."

"The Ruhr has become impossible to reach from Belgium and the Netherlands because of a lack of maintenance and temporary speed restrictions."

"It not just about investing in infrastructure, but software, such as digital capacity management tools, to manage traffic flow efficiently."

Mr Christian Kern, a former CEO of Austrian Federal Railways (ÖBB) and chancellor of Austria, explained how rail is starting to become a data driven industry. "Rail doesn't suffer from a lack of data, it is how to make use of it that is the challenge," Kern pointed out. "The number of drivers and operators will reduce while the number of AI and

software developers will increase.”

Kern noted that the coronavirus pandemic is accelerating the adoption of digital technologies. He described the EU’s Green Deal as a mandate to become more productive, and digitisation is the key to achieving it. “Bombardier Transportation failed because it couldn’t transform from a hardware to a software-based company,” Kern said. “Alstom’s stake in [rail cyber security company] Cylus is an indication that rail has moved into the software age.”

Kern pointed out that rail cyber-attacks are skyrocketing, having increased by 173% since 2016 to the point where there is now, on average, a cyber-attack against critical rail systems every 30 days. Kern predicted that cyber security will become a key competence and will become the number one priority for top management alongside strategy.

Mr Sylvain Haon, senior strategy director with the International Association of Public Transport (UITP), addressed the trends in urban public transport. “We are at an all-time high in terms of road traffic because of the pandemic - we must bring our customers back,” Haon told delegates. “We are seeing a



Keir Fitch says the EC had scaled back its target to reduce transport greenhouse gas emissions by 100% by 2050 to 90% because it is so difficult to achieve.

different mobility with a big acceleration in trends. How much of this change is here to stay is difficult to say because it is difficult to see patterns as every city is different. Weekend trips are increasing faster than commuting, and suburb to suburb journeys are rising faster than those from the suburbs to the city centre.

“Maybe we have been focussing on building beautiful systems, rather than how systems are used with easy payment systems and providing an easy experience,” he speculated.

Mr Keir Fitch, head of unit with the EC’s Directorate General for Mobility and Transport (DG Move), provided delegates with a reality check. Fitch said the EC had reduced its target to reduce transport greenhouse gas emissions by 100% by 2050 to 90% because it is so difficult to achieve.

Referring to the EU’s goal to double high-speed rail traffic by 2030 and triple it by 2050, Fitch said the emphasis should be on finding ways of expanding the reach of existing high-speed networks because building high-speed lines is very expensive.

He also described the rail freight target of increasing traffic by 50% by 2030 and by 200% by 2050 as “more difficult than it looks. We certainly won’t be carrying coal, so combined transport needs to triple by 2030,” he said.

Fitch added that there is still a lot to do to achieve the Single European Rail Area (Sera) and called for a renewed effort to abolish barriers over the next few years. “We need common railway operating practices and a common digital platform,” he said.

Mr Josef Doppelbauer, executive director of the EU Agency for Railways (ERA), said that in order for rail to become the backbone of the transport system by 2030, it needs system-wide

change.

“The longer the last mile to rail is, the harder the switch to rail will be,” Doppelbauer pointed out. “We need seamless movement of trains. At every border crossing we lose time and increase costs because of the different national rules. We need data sharing within rail and with other modes. We need Sera; I am even tempted to say a single transport area. We need to build a digitally-integrated rail system.

“But do we have enough talent to achieve all of this?” Doppelbauer asked.

Asia

Mr Bertrand Goalou, principal transport specialist with the Asian Development Bank, said that Asia had already started to shape the future of transport and mobility. Goalou pointed out that some Asian countries have already built substantial high-speed rail networks, especially in China, with more lines under construction, including the first lines in Indonesia and Thailand. He said while rail’s share of land freight transport fell from 63% in the 1990s to 42% in 2018, it was still well above the global average of 27% in 2018. While 10,000km of rapid transit lines have been built in Asian cities, there is still a lot to do because 470 million people are without access to rapid public transit. “This is an immense task before us,” Goalou told delegates.

Ms Zhang Yanfang, deputy director general of China National Railways’ (CR) passenger department, said that China has witnessed an 18.6% average growth in high-speed rail traffic since the first high-speed line opened. By 2025, China’s high-speed network will have grown to 50,000km and its conventional network to 120,000km. “Railways will reach almost all cities

Key quotes from around the globe

“The digital coupler brings data into freight train operation and will provide strong benefits to customers and improve working conditions.” Bettina Wunsch-Semmler, head of transport policy and compliance officer, DB Cargo

“By 2030, 50% of Saudi Arabia’s electric energy will be produced from renewable sources and we will reach carbon neutrality by 2060.” Dr Bashar Al Malik, CEO Saudi Railway Company (SAR)

“Precision scheduled railroading (PSR) aims to provide predictable schedules between any two points.” Scott Cummings, assistant vice-president, research and innovation,

Transportation Technology Center Inc (TTCI), United States

“Rail wasn’t on anyone’s agenda in the 1980s; now it is quite different.” Tom Sargant, UIC’s Pacific representative speaking on behalf of Megan Bourke-O’Neil, deputy secretary, Transport for New South Wales, Australia

“We focussed on growth for the last 50 years, and for the first time we have the investment to grow.” Stephen Gardner, president Amtrak

“We are moving from an information to an intelligence era where we are pulling systems together which will enable operators to have

full situation awareness.” Norman Frisch, transport marketing director, Huawei

“We are seeking to launch freight trains from Pakistan via Iran to Turkey and from Pakistan via Iran to Central Asia and Russia within five years, and we have an agreement to connect to the Iraqi rail network at two locations.” Dr Seyed Miad Salehi, chairman and president of Iranian Islamic Republic Railways (RAI)

“Brazil’s federal government never gives money to mobility; it is an absolute no and it believes that fares can cover 100% of costs. It is a lie.” Joubert Flores, chief of the board, ANT Trilhos, Brazil

with an urban population of above 200,000 and high-speed lines will access 90% of cities with an urban population above 500,000," she said.

By 2035, China's conventional rail network will have expanded to 130,000km and the high-speed network will be 70,000km. "One-to-four-hour travel circles among adjacent medium and large cities as well as 0.5-to-two-hour travel circles within city clusters will be taking shape," Zhang said. "There will be smooth connectivity with civil aviation, metros, and other transport modes."

As far as the China-Europe rail freight corridor is concerned, Mr Dong Hui, deputy director general of CR's freight department, said that more than 46,000 trains carrying 4.18 million TEUs have been operated between China and Europe since China Railway Express (CRE) was inaugurated, but only 27,000 trains transporting 2.04 million TEUs have run in the opposite direction.

Dong listed some of the initiatives CR had taken to promote CRE. These include preferential freight rates and establishing a price coordination mechanism, while the logistics costs associated with CRE trains have been reduced. CR has created diagrams for more than 70 dedicated CRE routes running at 120km/h. Documentation and customer service centres have been set up along with a railway customs information mechanism and insurance.

Despite the success of CRE, Dong said there are still problems to be overcome such as insufficient port capacity, inefficient customs clearance, unbalanced freight volumes and insufficient information sharing. CR would like to see an expansion of sea-rail intermodal transport corridors, greater port capacity, and stronger international customs cooperation. He also called on European railways to do more to promote CRE to attract freight to rail from Europe to China.

Mr Anton Kozlov, head of Russian Railways' (RZD) foreign projects and international cooperation department, said RZD wants to quadruple its transit container volume by 2024 compared with 2017. In that year, RZD transported 414,000 transit TEUs. This increased to 618,000 in 2019 and 801,000 in 2020. This year, transit TEUs are forecast to reach 1 million, rising to 1.656 million in 2024. Kozlov said RZD plans to increase the capacity of the east-west corridor to 180 million tonnes by 2024 and reduce the transit delivery time to seven days.

Kozlov said RZD is trying to develop the north-south corridor from Finland via Russia and Central Asia to India and Pakistan. "The volumes have been

quite modest, but we are seeing the first signs of good cooperation between railways," he said.

The UIC is celebrating its centenary this year, but it has taken much longer to get railways to think internationally. "It is not without reason that we are a patchwork of incompatible networks because rail has never been international and the market drive to become international was poor," Davenne told delegates. "So we shouldn't be ashamed that it is taking time to change."

Davenne said the development of the 5G based FRMCS being developed by the UIC as the successor to the 2G-based GSM-R system will give rail a strong data backbone. "We also need a common digital platform and a common protocol for ticketing," Davenne said. "We need to develop concrete things that will give results for our customers. We have 10 years to make a difference and there is a huge expectation on the rail sector," he concluded. **IRJ**