The value of rail

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UIC, the International Union of Railways, which I have had the privilege of serving as Director-General for over 10 years, represents the whole community of rail operators throughout the world.

Its main mission since its inception in 1922 is:

- to harmonise and standardise all operating, maintenance and service processes,
- to create a focal point for research and innovation,
- to promote the socio-economic contribution and added value of the railways for developed or emerging societies,
- and lastly, to anticipate trends, projects and developments that could underpin the railways of the future, connecting cities, countries and continents, and interfacing with other modes of transport.

Now, at the start of the 21st century, railways are experiencing a new revolution, a digital revolution following on from:

- the first industrial revolution in the 19th century, which the railway with its steam engines and metal structures helped to spread,
- the second revolution mid-way through the 20th century with the energy crisis and the emergence of electrification and high-speed rail,
- the third revolution at the end of the 20th century with the arrival of information technology and the advent of interconnected ticketing systems.

Today, the rail sector finds itself in a new context, faced with three new paradigms:

- we are moving from a world of possession to one of accession, in which the notion of transport is changing into one of mobility and accessibility,
- we need, moreover, to find a better balance between individual freedom, including the freedom to travel, and the collective interest, providing safe, high-capacity public transport playing a key role in modern societies,
- we also need to adapt our travel habits, focusing less on the individual and opening up to outside ecosystems and new technical, economic and financial partnerships.

Transport is the organiser of the movement of goods and people. It therefore has a direct impact on the economy, but can also be affected by the stability of physical and geo-political links across the world.

With its global reach, over 200 members in a hundred countries and 80 international partners, UIC is able to identify the main trends that are emerging or gaining ground in different parts of the world.

We are witnessing a geographical fragmentation, a wide diversity and often political instability in certain countries or economic areas, a relative economic disintegration and an increasing move towards nationalism.

These trends should not, on the face of it, favour the development of railways, which more than other modes of transport calls for interoperability, major investment and stability in space and in time to support long-term projects giving low returns on investment.

But we are seeing quite the opposite effect in a large number of rail projects throughout the world.

This can be attributed to certain fundamental values of the rail system in terms of capacity, safety and, increasingly, its importance in sustainable development policies.

Added to these values is the socio-economic impact of rail projects, both through regional development and increased GDP in areas benefitting from a new or improved service.

The prospects for mobility worldwide in the next ten years are good. Taking all modes together, freight transport should increase fourfold, and passenger transport by 50%, with a sharp rise in intra-urban mobility due to large-scale urban development and the building of megacities.

Major investment of more than $11,000 billion is planned over the next 20 years to meet these new demands, 40% of which will be for rail renovation and construction projects and for new east-west and north-south corridors.

A large part of this investment will go towards intra-urban projects, which are estimated to need around 6% of global GDP over the coming years, whereas investment so far is no more than 0.5% on average.

There will also be large investment in high-speed links; the worldwide network is set to triple in the next 30 years and provide connections to all airports.

Sizeable productivity gains are also expected in the logistics chain for the transport of goods: logistics costs currently account for the equivalent of 18% of the product value, whereas it should be between 3 and 5%.

The winning strategy to support this

anticipated growth in market demands can be summarised by the 5 I's:

- the first, applicable to all transport, is Infrastructure, which in the railway sector requires heavy investment,
- this Investment increasing calls for
- Innovation to improve productivity and safety, technical innovation through the impact of digitisation to improve operation, maintenance and services, and innovation in funding provision, particularly public-private partnerships,
- innovation calls for new forms of Intelligence using new economic models and new industrial partnerships,
- and lastly, mobility in the 21st century will essentially rely on Integration to optimise the added value of each mode, with railways providing the backbone linking with other modes of transport to provide a complete mobility chain.

This is therefore the strategic framework to be applied when calculating the cost-effectiveness of all projects for a more accurate assessment of the long-terms benefits.

In purely financial terms, such benefits often appear to be very low and spread over a long period.

For this reason, it is regarded as increasingly important to be able to measure the indirect benefits of such investments for the community. These can be seen in terms of socio-economic benefits and, increasingly clearly, in the benefits for the environment and for sustainable development.

Socio-economic benefits can be seen in the creation of jobs,

increased GDP, time savings, regional and urban development, reduction in the cost of road accidents and time advantages, and correspond to an additional measurable return of around 3 to 5%.

Bearing in mind that urban congestion currently costs local authorities around $200 billion a year, and that railways account for only 1 or 2% of the 25% of CO2 emissions for the transport sector, it is clear that an environmental benefit can also be calculated by default and added to the socio-economic benefit, in terms of savings rather than profits.

The combined savings on all intra-urban and inter-urban projects in progress or planned over the next few decades alone represent $100,000 billion, which exceeds the figure for planned investment over the same period.

If we take this approach, combining direct benefits, charges avoided and savings for society, the socio-economic and sustainable IRR can be said to be more than double the economic IRR.

But we need to put these benefits into perspective and know how to allocate them.

Without railways, there would be a 15% increase in oil consumption and 12% increase in greenhouse gas emissions in order to handle the transport of goods and people.

This simple observation leads to another more radical approach, that of measuring what the cost of mobility would be for society in a world of globalised trade without the railways, and to realise that the value of what is missing is greater than you think… ■