

Becoming wise about ITS

Transport is an essential element of the global economy and is growing steadily. However, it's far less efficient than it might be and this has economic, social and environmental implications. Murdoch Mactaggart learns from the UNECE how ITS can transform things.

- ▶ **Transport is an essential adjunct to most trade, information and financial services perhaps excepted. And while trade between different continents may require air or sea transport, intra-continental trade depends heavily on road freight and on rail. Well over 70% of the UK's trade is with other European countries and as much the same applies generally throughout Europe there's a considerable and growing demand for road transport, even allowing for the present economic slowdown. Add in the fact that European citizens have become used to the convenience and flexibility of private cars and the European Commission's estimate of a 15% growth in road traffic in the decade from 2010 seems modest.**



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Road traffic accounts for nearly 18% of CO2 emissions and pressure on the existing road infrastructure is considerable, even before allowing for growth. Yet simply building more roads is not a viable solution.

A related problem is road safety. Around 3,000 people worldwide die daily in road accidents, some 1.2 million annually, while a further 40-50 million are injured. Road accidents are currently the ninth cause of premature death or disability but by 2020 are estimated to become third, overtaking both HIV and tuberculosis. And the direct global economic costs of road accidents is substantial, estimated at some €403 billion a year.

Travel kills

"We are in a global crisis with regard to road safety. The figures are appalling!" exclaims Eva Molnar, Director, Transport Division, UNECE. "This is not just a transport issue, however. It's also a health issue, a social issue and even an economic development issue because in lower-income countries less attention is given to the problem and less financing provided and so casualties are higher."

ITS can play a major part in making roads and vehicles safer, claims Molnar. Driver fatigue contributes to accidents and the introduction of mandatory rest periods for truckers with compliance enforced through tachograph recordings have certainly contributed to reducing accidents from driver error. Perhaps it's time to look at what additional services, such as vehicle tracking or road toll paying, can be added to tachographs, she suggests.

A UNECE Working Party, The World Forum for Harmonisation of Vehicle Regulations, works to develop a legal framework of vehicle regulations around matters such as safety, environmental impact, energy efficiency and vehicle theft. While ITS is not directly part of the working party's remit ITS technologies are increasingly considered in relevant areas. Examples include on-board diagnostics, anti-lock braking, adaptive lighting and electronic control systems among others.

"The UNECE is heavily involved with regulations covering vehicle ITS technologies" says Molnar "with electronic control stability systems arguably the most important among these in terms of safety contributions. Some specialists say that such control systems will

United Nations Economic Commission for Europe



save as many lives - if not more - than seat belts. This kind of activity is at the heart of UNECE's work."

"But ITS is far broader than just around vehicles." she continues. "It's not enough to have good vehicle ITS solutions - you need to have an interaction with the infrastructure as well. ITS is actually broader even than that as it also covers ICT's transport applications."

Catching up with business

Molnar is certain that ITS is vitally important to the future of efficient transport processes. Yet governments and other decision making bodies, including the UNECE, lag behind business in their understanding of the capabilities and potential of ITS.

"Business is ahead of governments and international organisations and it's our task to catch up, to learn how to use these solutions to better implement transport policy goals." she says. "Right now we're asking questions but we don't necessarily know the answers. UNECE has actually become the centre for international agreements concerning vehicle standards and surface transport - that is, road, rail and inland waterways - as well as for regulations on the transport of dangerous goods and other sensitive cargos and so we are obliged to learn, in addition to being the gateway for disseminating best practice. And I believe, perhaps particularly where road safety issues are concerned, that good cooperation between the UNECE and the ITS community would be beneficial for everyone."



Interoperability is essential

For historic and legacy reasons it's actually quite difficult to move rail rolling stock across national borders and lack of interoperability remains a major obstacle to rail network development. Molnar is concerned that similar interoperability problems should not bedevil rail-related ITS deployment across Europe and beyond. This is an area where, through its regulatory work, UNECE could make a major contribution.

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“Vehicles travel across borders” she says “but infrastructures are local and if you don’t have proper interoperability, including between the different local infrastructures, then the technology becomes a hindrance rather than a help. Consider electronic road pricing or toll charges – if you needed a different appliance for each country visited you might even end up with no room left for the driver! We got rid of the Iron Curtain in the 1990s but unless we’re careful to achieve full interoperability between intelligent transport devices we risk creating an electronic curtain across Europe instead. This is an absolutely crucial area, not just for the UNECE countries, but for the world as a whole.”

It’s sometimes overlooked that ITS is not just about vehicles and transport infrastructure but also has a social dimension even where pedestrians or the public generally is concerned. There have been trials in Tokyo using RFID (Radio Frequency Identification) to provide information at street corners to help guide blind and partially sighted people and in Prague there was a pilot project developed with the support of the Czech Association of the Blind which used sensors in walking sticks to advise on the route numbers of buses arriving at stops.

Improving mobility equity

“ITS can also help mobility and can help bring equity in mobility.” says Molnar. “People with reduced mobility – perhaps on account of disability, or aging, or because they’re with small children – can find travel very difficult and imaginative use of ITS can help greatly. More generally, ITS can definitely make public transport more customer-orientated, with higher levels of service. So ITS is very important but, of course, won’t of itself solve social problems or even public transport ones.”

“Interestingly, ITS can also help the equity problem which lower-income countries may have. Particularly in the case of landlocked low-income countries, often remote from ordinary travel routes, trading with other countries can be difficult and expensive. If ITS is used to improve local transport efficiencies such countries can in turn improve the development of their economies. As a UN organisation we are very supportive of such goals and of matters such as border crossing facilitation.”

Various working parties of the UNECE are looking at different aspects of transport interconnectivity and at improving these in order to improve the opportunities for trade. These include the Trans-European Motorway project, the Trans-European Railway project and, most recently, the Eurasian Transport Linkages project, this last aimed at facilitating trade between Europe and Asia, a focus which is also very much part of European Union thinking.

ITS brings a new culture

“In many of these cases ITS can help develop more efficient infrastructure” explains Molnar “and at UNECE we could use our

procedures to disseminate knowledge and awareness of best practice, for instance through activities that promote regional coordination of investment planning.

“ITS is technological innovation, yes, but it’s not just technology.” she adds. “It’s much more than that. It’s a new culture for doing business and a new culture for governments to accomplish what they have to as public bodies and it’s a new culture for international organisations. And, of course, ITS should never be a goal in itself but a facilitation mechanism.”

“At UNECE we work closely with other bodies such as the European Commission, the OECD and its International Transport Forum, ERTICO and many others. We intend to play our part in supporting what ITS can do to improve transport efficiency and, through that, trade and economic development.”

Facilitating European economic cooperation

The United Nations (UN), set up in 1945, seeks to facilitate international cooperation in a range of areas such as security, human rights, social progress, international law and economic development. A further major aim is promoting world peace. The General Assembly and the Security Council, and perhaps the International Court of Justice based at The Hague in the Netherlands, are the best known of the administrative bodies of the UN but as an organisation spanning almost the entire world – 192 countries are members - there are many specialist UN agencies such as the WHO, UNESCO, the IMF and the ILO among numerous others.

There are also five regional commissions with the broadly similar focus of promoting economic and social development and regional and international cooperation. Apart from the UN Economic Commission for Europe (UNECE), there are individual commissions for Latin America, Western Asia, Asia-Pacific, and Africa. UNECE has 56 member countries, primarily European but including also Canada and the US, the Central Asian Republics, and Israel. Most of its transport instruments have global coverage.

With a budget of some €40 million and headquarters in Geneva, UNECE provides analysis, policy advice and assistance to governments and it works with a number of organisations throughout the world to promote pan-European economic integration. It also plays a major role in developing regulations appropriate to, for instance, vehicles and transport in general and it works towards gaining international agreement for these. The TIR Convention, for instance, established an international customs transit system, now with 68 country members, with the practical effect of significantly lowering the time spent on checks at intermediate borders, and hence transport costs, while maintaining adequate security against customs fraud.