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- [Events](#)
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- [Our latest Issue](#)
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Friday 26 November 2010

America's ITS Vision

Pete Goldin talks to Dr. Joseph Sussman, Chairman of the ITS Program Advisory Committee, about the state of intelligent transport systems in America

An ITIF report published at the beginning of this year stated that America is falling behind other developed nations in terms of ITS technologies and their deployment to address safety, congestion and environmental challenges. The report asked for a stronger commitment from the US federal government (see 'Just crawling along', interview with senior ITIF analyst Stephen Ezell, ITS International March-April 2010, pp.NA1-NA2) in order to address what it sees as increasing disparities with other countries.

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Dr. Joseph Sussman

The ITS Program Advisory Committee (PAC) has perhaps one of the most important roles to play in helping the US drive much-needed ITS initiatives and reclaim leadership in the sector.

Enabled by the US Congress under SAFETEA-LU legislation, the committee provides advice to the USDOT's Research and Innovative Technology Administration (RITA) and the ITS Joint Program Office (JPO). The 20-member committee, comprised of diverse stakeholders from across the industry, serves as an independent voice within the ITS community.

A new vision for transportation

There is a continuing call for a new vision for transportation in the US, according to Joseph Sussman, JR East Professor in the Department of Civil and Environmental Engineering and the Engineering Systems Division at the Massachusetts Institute of Technology (MIT). Sussman is also the PAC's Chairman.

More and more commentators are suggesting that the transportation community cannot simply grumble about how difficult things are and how more funds are needed, he says, adding that the industry must come forward with a vision which captures the imagination of the public. He cites the Interstate system, which served as the linchpin for surface transportation policy for decades, as an example.

"Can ITS be part of a new vision? I believe so," he states, "but first the transportation profession has to recognise the need for such a vision, develop it and further convince the public that its vision makes sense. If that happens, funding for a variety of programmes will follow and the abilities of public sector agencies to advance the ITS agenda will expand. Markets for the private sector will likewise expand.

"I don't think we have such a vision now and the public is weary of our negativity. The vision for transportation for the US is not well developed. Current activities are fragmented, and the public is very sceptical of a political system that builds 'bridges to nowhere' rather than focusing on real issues and problems in a visionary way. We need to fix that."

Winds of change

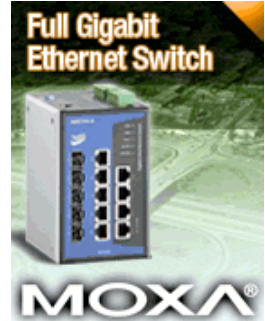
"I'd like to argue that the winds of change are blowing through the profession – because we really have no choice – and that a new transportation vision with a role for ITS is on the horizon," he adds. "I certainly hope that's the case!"

Sussman cites a growing emphasis on workforce development in transportation as a positive sign and a key to developing the new vision. He says that the US needs a new transportation professional, one who is educated to think more broadly about transportation technologies and how they relate to transportation systems and institutions.



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"Slowly but surely we are seeing more and more of those people being educated in a variety of disciplines and advancing professionally through various transportation organisations. Those people are now reaching more senior positions and I believe that ITS solutions will become more and more a part of the agenda."

Even though he is optimistic about workforce development, however, Sussman points out that there is still a substantial number of transportation professionals who believe that building conventional infrastructure is the only way forward.

"I am not against conventional infrastructure – we need it in many corridors - but having people recognise there are unconventional infrastructure solutions such as ITS is a continuing battle," he adds.

10 years behind technologically

Sussman says the US has many advantages that could be the foundation for ITS success, including: an enormous domestic market with the largest GDP in the world, which will be a huge market for ITS technologies and services; some of the best technology in the world in areas such as advanced onboard sensors, communications systems, consumer mobile devices and backend servers; effectiveness at integrating these technologies and crafting the complex software required; and, maybe most importantly, the innovative thinking and entrepreneurial spirit necessary to bring new, creative solutions to market.

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ITS, says Sussman, has to become more inclusive, taking goals such as mobility and economic development, protecting the environment and safety, and dealing with them in a mutually reinforcing manner



"The challenge now," he warns, "is to better understand how existing and emerging technologies can be harnessed and applied to address the needs of the transportation sector in an integrated systems manner. In my view, ITS can do better here.

"We have to think of ourselves as responsive to a variety of technologies and technology architectures that are being advanced in many applications," he continues. "Often we view ITS as a standalone application that does not draw on other advanced technologies in related industries. That's a mistake. It's trite to say technology is advancing as never before. But it's also true. Can ITS draw upon this technological revolution more effectively? I certainly hope so. As one of my committee colleagues said, and I paraphrase, ITS in the US is 10 years behind technologically right now."

Sussman reiterates that some members of the PAC believe the US ITS programme is slipping, in terms of technology. In its most recent advice memo, published on 6 August this year, the committee highlighted technology as a key topic for further discussion at upcoming meetings over the next several months.

The committee also recommended a stronger commitment to safety and a holistic approach, encompassing all of the technology domains inside and outside of the vehicle, to address a vision of zero fatalities. Although there are a number of valid reasons why that is not achievable, says Sussman, the vision is valuable in driving creative and aggressive thinking and strategy.

There are limits to what JPO can do on its own, with respect to technology, however. ITS in the US is driven by a varied mix of organisations, both public and private. The question here is what role JPO should play in ITS research and development.

"JPO should strive for a national leadership role, investing in research in technologies for which they are best suited, and perhaps creating forums and documenting activities in the private sector, academia and other sectors where important ITS contributions are being made," he advises.

"The role of the federal government in ITS must be strong but it cannot be overly intrusive if the private sector is going to effectively develop its own products and services."

ITS in the real world

Sussman clarifies that it is not just about developing the ITS technology, but also implementing that technology on the roads and highways of America.

"The committee has expressed its impatience with the pace of deployment of ITS to JPO and has stated that a key metric for the ITS programme should be rate of deployment. There is important research to be done, of course, but getting systems in place on the ground is vital."

In addition, the committee has been vocal about the need for ITS to address a variety of what Sussman calls Critical Contemporary Issues (CCIs).

"I think that ITS has to be inclusive in its goals — it is not only about mobility and

economic development; it is not only about protecting the environment; it is not only about safety. It is about all of the above, and these goals can be reinforcing. That's my view of how JPO and the ITS community should be thinking. The committee will continue to emphasise the necessity for this balance across issues and not to over-emphasise any one to the potential detriment of others.

"Transportation has an important technological component, and further, has substantial societal impact. Characterising ITS in this way and recognising we have issues of technological progress, issues of institutional development, and issues on the interaction of ITS with the transportation system at large as well as with other CCIs - energy, environmental, and so forth — that's the way forward. I hope the ITS Program Advisory Committee can effectively advocate for ITS in this broad, inclusive manner."

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Current transportation activities are fragmented, and the public is very sceptical of a political system that builds 'bridges to nowhere' rather than focusing on real issues and problems in a visionary way, says Sussman



With societal impacts in mind, the PAC has also advised JPO to recognise the 'digital divide' - the fact that people in the lower strata of the US economy often have little access to the Internet and related services - and develop its programme to address those issues.

Lastly, Sussman identifies a need for a multimodal approach, not only for ITS but for transportation as a whole. He says the US needs to establish a multimodal transportation system to satisfy the needs of travellers and freight customers and that ITS can and should be a major positive force in creating this multimodal system.

"We all want a transportation system that is safe, efficient, effective, environmentally responsible and equitable," he concludes. "We must find a way to develop the technology, fund the programmes and integrate disparate efforts in the public and private sectors toward these common goals so that we can demonstrate substantial visible progress and measurable results."

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