David Crawford reports from *LTT*'s 2011 Modelling World event

Data stewardship a key issue in Polak's plan for modelling

MODELLING

A FIVE-POINT plan for the future of transport modelling and appraisal was presented to the 200-plus attendees at the 2011 Modelling World conference organised by *LTT*.

In an opening plenary, Professor John Polak warned of transport models suffering from the disadvantages of 'big brain' architectures.

These, said the director of the Imperial College Centre for Transport Studies, include a lack of scalability when it comes to 'big data', already an issue for traffic control systems and emerging strongly in activity-based modelling.

Data quality and management emerged as central conference themes. "Historically", said Polak, "large amounts have been collected but their stewardship is often very poor. Trendy 'open data' initiatives per se do absolutely nothing to address the issue, and access problems to existing data are at least as important as gaps in coverage."

Solutions could lie in semantic web technologies, transferring data quality standards from other domains and using existing methods of optimally updating large historical datasets. "The current financial crisis might stimulate such innovations," he said.

In the process industries, modelling has begun to move away from centralised hardware and software architecture, said Polak. Among the benefits are that:

- Computation can be distributed to the grid/cloud, reducing local hardware costs and ICT policy dependence; and
- Software as service solutions enable sharing across different users, reducing procurement and maintenance costs.

Polak foresaw future models based on composable web services, a market which would accelerate innovation and reduce scope for supplier rent seeking. This "beneficial trajectory", he warned, is neither easy nor assured, "but its impact could be profound".

He highlighted possible new data sources, eg MESSAGE project-type networks of miniature air quality sensors on roadside furniture, vehicles and even travellers, communicating wirelessly to create "an entirely new data collection infrastructure to manage traffic-related emissions"; and the FREEFLOW project's traffic sensor processing and data fusion for network state estimation and prediction.

In the short-term, he noted, the transport sector faces both a 30 per cent reduction in resource expenditure over next five years, as a result of the financial crisis, and an unprecedented set of inter-related policy pressures. Delivering on commitments on climate change will mean both mitigation (with a target of 80 per cent reduction in GHG emissions by 2050); and adaptation of infrastructure (to overcome vulnerability and build in resilience).

At the same time, it will have to ensure that investments contribute to economic competitiveness, achieve greater impacts from demand management, and adapt to the effects of rapidly changing technologies. "Each of these raises new and significant challenges for modelling and appraisal," he said.

In response, he urged a five point plan:

- Make more effective use of existing data resources;
- Make better use of potential new data sources;
- Drive academic and commercial innovation in modelling architectures;
- Accelerate the progress of relevant modelling research into practice; and
- Protect standards in education and training.

Dutch short-term forecasting system set to grow

FORECASTING

DUTCH COMPANY Modelit announced plans to gain 750,000 new users of its TripCast short-term travel time forecasting by service by end-2011.

Modelit owner Nanne van de Zijpp told a session on transport modelling that the firm had recently won a €200,000 prize from the Netherlands Ministry of Infrastructure and Environment prize, conditional on achieving this target, to fund the development of new applications.

The company has already won €200,000, with a 500,000 user target (achieved), in an earlier, 2008, competition, for its TripCast algorithm. It used the prize to develop its website.

The TripCast service works by path computation based on average travel times, with retrieval of loop data from a historic database. It can take into account factors including weather conditions (rain, snow, light condition), summer and bank holidays, seasons and the age of data.

Van der Zijpp said he believed non-users benefit as much as users because, as the latter avoid congested time-slots and routes, the former enjoy resulting reduced travel times.

Modelit plans to achieve its new target by improving its website and hardware, creating new online services, and developing a smartphone application.

One of Modelit's client is Traffical, whose BlackBerry and I-phone service integrates a travel diary with journey time forecasts and alerts. Dutch financial institution Rabobank is already equipping its employees.

The company aims to expand its user base in the Netherlands, and find international partners for wider implementations.

Time savings clash in debate on appraisal quality

APPRAISAL

CLIMAXING THE conference, urban and regional policy specialist Alan Wenban-Smith and Chris Riley, an associate with economic consultancy Oxera, clashed over the future of transport appraisals. Urging radical change, Wenban-Smith said current practice is "not fit for purpose".

"It does not work in detail, depends on time savings as proxy for welfare and causes huge discrepancies with direct measures of welfare. Nor does it work at a strategic level, with transport being treated in isolation. Dependence on time savings has damaged UK cities' economies, social fabric and environment."

The present system, he said, facilitates centralised decision making by the DfT, but was neither strategic nor integrated. Any alternative should reflect the major dynamic and strategic roles of transport and support devolved and integrated decision-making.

"How", he continued, "can an appraisal help the DfT to focus on strategic spatial and resource issues? Are time savings of any value at this level (even if reliably forecast and valued)?

"How can it help Local Enterprise Partnerships and Integrated Transport Authorities with their spatial strategies and transport priorities? Is it time for radical changes in modelling, appraisal and governance?"

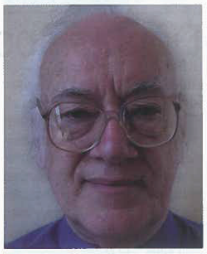
Riley defended the present appraisal methodology as "adopting the right basic approach", with its focus on social welfare within a broader overall approach to decision making. "Value for money is a key criterion, but other factors always need to be taken into account," he said.

He accepted that the practical implementation of modelling and valuation could be improved significantly, but "incremental improvement is preferable to radical redesign, throwing the baby out with the bath water. Rigorous and transparent approaches are needed, but not spurious accuracy".

Challenging his audience, Riley asked: "Is it feasible to improve models to the extent needed? What are the priority areas and most promising developments?

"Are modellers up for it? And up to it?".

Wenban-Smith: radical change necessary



Riley: incremental improvement preferable

Modelling World briefs

- Paul O'Neill, managing director of traffic survey data specialist Intelligent Data, reported successful spring 2011 trials of Bluetooth technology-based journey time measurement. A two-transponder demonstration on the A404 M4-M40 link road collected over 400 hits at each location in two hours, resulting in over 100 journey time runs. He is now seeking more trial sites, with a view to putting a product on the market.

- "There is no 'one size fits all' approach to calibration and validation", said Boris Johansson, technical director of Scottish transport planning consultancy SIAS. Guidelines need to recognise direct relationships between models' purposes and outputs required.

- Acknowledging that "we can't extract much more from behavioural modelling", consultant Luis (Pilo) Willumsen urged the profession to "exploit the superabundance of data out there" to encourage different approaches to policy advice, experimentation and decision-making support. "While we still need transport planning, our existing (and future) tools are less reliable than we pretend. Using complementary models should help; but interpretation and judgement, and the exercise of professional responsibility, should also be more open and transparent".

Scrap as Df

FREIGHT

by Andrew Forster

MINISTERS ARE to scrap plans for lon local authority offi alliance of environ safety and rail freig groups.

Consultation clos on the DfT's plan to semi trailer lengths 15.65 metres, a mov increase the maxim length to 18.55 metr

In its response, the ernment Technica Group (TAG) predic vehicles will present safety risk to pede cyclists and increas footways. "It is not the busiest urban are (London), longer ber being removed largel their impact on vul users," says TAG.

The point is ampli response by the Ca

New lor

LORRY CHARGI

EU MEMBER state to charge lorries for and noise costs unde the 1999 Eurovigne that have been agreed states, MEPs and th Commission.

But proposals to a

Reform grant ru

FREIGHT

SCOTLAND'S R transport partnership for major reforms regime for switchin road to rail and wate

The RTPs have Scottish transport m Brown and the DfT the Freight Facil regime to be made tive to businesses FFG funds capital w freight terminals modal shift.

Grant criteria are by the DfT, with g based on a calcul number of road fr saved by transferring rail or water. The hi tary values are giver lorry miles on cong