



Wendy Weijermars

Traffic jams on motorways and congested cities seem to demonstrate that our increasing mobility has become counter-productive.

The national TRANSUMO project aims to deploy technology as an important step towards sustainable mobility, starting with the collection of road use data. Wendy Weijermars is attempting to identify traffic patterns to facilitate effective traffic management.

Recognising patterns in urban traffic

'Information panels providing estimated travel times are already in place on some motorways for some years now. Clever anticipation requires accurate measurement and understanding of what is happening on the road. This information can be provided in a fairly subtle manner, for instance, by adjusting traffic lights. Providing dynamic route information by means of information panels along the road or using in-car systems are alternative methods. I expect these methods will ultimately be combined. The main road network should present comparatively few difficulties. I am more interested in regional roads, and city dynamics in particular. The Transition into Sustainable Mobility or TRANSUMO project focuses on traffic management and distinguishes advanced traffic monitoring, advanced traffic management and intelligent vehicles.'

'My research pertains to the first stage of this project. I analyse and interpret traffic data and make predictions to facilitate the development of management scenarios and the use of intelligent technology. Traffic technology is often used on an ad hoc basis, e.g. the information panel over the road warns you to slow down if you are approaching a traffic jam. The car's navigation system determines an alternative route based on traffic jam or roadworks information. In a sense, the problem is shifted rather than solved. A sustainable approach is structural and addresses road use patterns and how

these should be taken into account. The focus of my case study is Almelo, a small yet busy town. I collect data using traffic light detection loops. A system of information panels is already in place on the ring road, but not optimally used. In addition to detection loops, we are investigating in what way GSM location data could be used as an additional source of information.'

'We want to use this information to develop traffic management decision support systems for a regional network. To be able to take the right measures, thorough insight is required into the traffic situation within the network as a whole. But you have to find causes as well: only in this way, management scenarios can be worked out for situations occurring more often. Because we're dealing with a network and not with one specific road situation, the possible solution of a problem is sometimes found on a different location than the problem itself. If you see that during rush hour, the city centre is congested mainly because of traffic that is only passing through, rerouting at the entrance roads of the city is a solution, for example. More in general, I am particularly interested in the interaction between time and space. This is virtually unexplored territory, and it might be the key to the introduction of true network management.'

'Traffic patterns depend on the time of day, the day of the week, the weather, the season and roadworks. On Mondays, traffic intensity is higher during rush hour and lower after rush hour than on other days. On Fridays, it is the other way around. If you see that the traffic outside of rush hours is concentrated mostly on the road leading to the campsite or furniture shops, you can attune policy to this knowledge. Travellers may have intuitive ideas about this, but in order to take the right measures, thorough analysis and adequate quantification are needed. The "right measures" make the traffic system faster, more reliable, cleaner and safer.'

'This means that we need a traffic information system in which all relevant parties can enter their data: traffic information, weather information and special situations like accidents and road works. For developing these information systems, within CTIT the required knowledge is at hand.'

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