Crowdsourcing the road

The Google 'traffic' app works by tracking the position of people's phones, as determined by GPS. When their position is judged to be on a road, software computes their expected speed. If they are much slower than expected, as are other users – whose extra data can independently confirm the phenomenon – then a trace appears over the road map, indicating a traffic jam.

This is one of those tech tools of today made possible by modern communications technology, and an example of crowdsourcing. Fitness app Strava, whose 'heat maps' published in November 2017 use the same technology, was in the news recently for highlighting the jogging routes of US soldiers in supposedly secret compounds in Afghanistan.

And it is coming to fleet vehicles – and not just trucks – via commercial telematics. In addition to tracking vehicle position, such systems will often also keep a record of instances where the driver has done something potentially risky or costly (over the long term), such as harsh braking or sudden acceleration. Crucially, the software can plot these incidents as dots on a street map. Where the dots converge, there exists a driving risk hot spot. This might be some kind of infrastructure problem – a road surface hazard, for example – that truck drivers should be warned about on approach.

The Safety Shield Fleet Management system, for example, includes an element called 'My Alert!'. Microlise's Driver Hazard Awareness system, still in pilot phase, was developed during a 2013-2016 government-funded collaborative R&D project with the University of Nottingham. These and other telematics suppliers should collaborate and share anonymised data to make rich maps, so everyone can benefit.

From another point of view, these systems might only be a bridge to the time when trucks can talk directly to the road network, through V2I (vehicle to infrastructure) links. And, as the V2I process occurs independent of the driver, this technology could support autonomous vehicles. To that end, the University of Warwick won a government contract last year to create the UK's first Central CAV (connected and autonomous vehicle) TestBed, using 80km of Coventry and Birmingham urban roads – which, by the way, I try to avoid when travelling. The traffic there is terrible.

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