The personalised traffic jam buster

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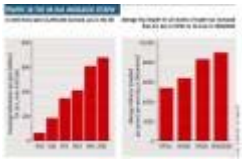
Duncan Graham-Rowe



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Traffic in the UK has increased steeply

YOU are driving home from work and the traffic suddenly backs up. Do you sit it out and hope it will soon clear, or turn off and look for a better route?

That decision might soon be made easier by software that estimates the quickest way to go, and delivers its recommendation to your car in real time. New technologies are at last taking on the dreaded traffic jam.

The streets and highways of most developed countries are already littered with sensors recording traffic speed and density. And many bus and truck fleets are equipped with GPS units that not only record each vehicle's location but also transmit it back to base. Some of this wealth of information is fed to traffic-monitoring centres, which broadcast congestion updates. But these only warn of major jams.

Existing in-car navigation systems, such as Trafficmaster in the UK, display some of this information to drivers, while others send text alerts to warn of congestion hotspots. Now more sophisticated systems are emerging in the US that add the personal touch, advising a particular driver on a particular journey of the best way to get around the gridlock.

Drivers who subscribe to a service called BeatTheTraffic, for example, first tell the system via a website about trips they regularly make, such as "route to work" or "school run". The system then messages them to say which route from A to B is most likely to be free of jams. It monitors a total of 14,000 road sensors in eight cities to provide up-to-date, real-time information, and calculate how long the journey will take.

In addition, the system will compare historical trends for each road segment with live data to help predict how a journey will pan out. So even if your route is gridlocked up ahead, it may predict that the congestion will clear before you reach it. Alternatively, if the sensors find a faster route, they will recommend that instead, says Andre Gueziec of Triangle Software in Sunnyvale, California, which developed the system.

At present, it assumes you start by following your usual route, and issues text message alerts to a mobile phone - hardly an ideal way for a driver to be given information. But the company is talking to car manufacturers about integrating the system into satellite navigation units, which will not only tell BeatTheTraffic where you are but also give spoken directions. This personalised information, with feedback from road sensors, should help eradicate traffic jams, Gueziec says.

The information that BeatTheTraffic uses has been available for some time. The technical challenge for Triangle was to find a way to incorporate data from so many sensors, some of which update every 30 seconds, and store it in a way that allows software personalised for each subscriber to query it quickly.

Not everyone is convinced. "If everybody had the same information, then everyone would take the same route," says Ruth Bridger of the AA Motoring Trust, which promotes the interests of drivers in the UK. She also points to the possibility that extra traffic could be pushed onto smaller roads that would soon be swamped.

But Gueziec says this shouldn't happen. If the alternative route becomes congested, for whatever reason, sensors will pick this up and the route will no longer be suggested. "Likewise, if the congestion is partially resolved on the original road, the system will pick it up and stop redirecting." Because drivers will have different routes, the information they receive won't be the same, he says.

Other companies are taking a similar approach to Triangle Software. Last week Microsoft showcased JamBayes, a traffic-prediction system that its employees have been testing. Like BeatTheTraffic, it

combines historical information with live sensor data to make predictions about traffic conditions.

Will this approach catch on? In the past, drivers have had little reason to trust traffic forecasts, says Michael Schreckenberg at the University of Duisburg-Essen in Germany, who develops traffic-prediction systems for the German government. Only as the information becomes more accurate will that trust come. But with ever more cars on the road, even mass adoption of the technology will never ensure that traffic always flows freely, Schreckenberg says. "You will have jams as long as you have cars."