Beating congestion with mobiles

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Working out how people use a city's roads and planning for it, can be difficult, but research into mobile phone use may hold the key to preventing traffic jams in the future.

If you do not like crowds, congestion, chaos - and few do - then you might want to avoid Rome's rush-hour. But congestion in the city might be about to ease a little as researchers use Italy's passion for mobiles to combat Rome's daily war on wheels.

Researchers from Massachusetts Institute of Technology (MIT) are using data from mobile-phone networks to create real time maps of people moving around the city.

Networks keep track of subscribers to ensure signals stay strong, and because so many people have mobiles, this data can give an accurate picture of where people are in a city.

"This is really the first time that you can take an urban system, like a big city, and try to see in real time how it lives, how people move and what's happening in the city," says Carlo Ratti from MIT.

"In the city for example you've got taxis with GPS, you've got buses with GPS, and also you've got mobile phones.

"If you take that information and you apply artificial intelligence and algorithms to it, then you can understand very interesting things about the urban system," he says.

Beating congestion

Calming Rome's traffic is one possible application of the system.

Rome does not have an extensive underground - if it started digging holes the labourers would soon have to down tools while experts investigated whatever priceless artefact they unearthed. As a result most travel is above ground which means that many consult the web to find the best route across the city before they set out.

Pagine Gialle, or Italy's Yellow Pages, has been one of those working hard to keep the data on these sites up to date.

It is eyeing MIT's Real Time Rome as a way to fill in the gaps in its data.

"We have already all the data about real time traffic situations in Italy, but we have just the major roads. So [with] a different source of data, such as mobile phone usage, we are going to have much more data about where people and cars are moving, even on the smaller roads in town," says Paolo Cellini from Pagine Gialle.

Informing passengers

Real Time Rome might also help with the better allocation of transport resources.
Italy's transport agency Atac has already put route planners online. It also runs a mobile service to let people know when buses will arrive, so customers spend less of time waiting on smoggy streets.

"You can find traffic information, especially if there is a going to be a diversion because of a political demo in the city or if there are road works. You know when the next public buses are coming, we can also patch you through to our street cameras so you can see what the traffic’s like," says Fulvio Vento, Atac director.

Combine these informed passengers with real time data showing where the demand is, and in future buses might not stick to a fixed timetable or even route.

Sending buses to where the people are rather than vice-versa could mean fewer wasted journeys, so Real Time Rome might ultimately be good for the environment.

Better route planning for buses and cars could mean less time standing in traffic, pumping out noxious fumes.