



Drivers collaborate to make everyone's trip better

Video of **Harold Goddijn**, CEO of TomTom

TomTom, a digital mapping and routing company that focuses on car navigation, was founded in 1991 by Harold Goddijn, Peter-Frans Pauwels and Pieter Geelen. At the 2008 IBM Business Leadership Forum, Harold Goddijn spoke to participants about how drivers with TomTom navigation systems "opt in" to share their route information anonymously to benefit from better aggregate traffic management for everyone.

GODDIJN:

Now, if you think about it—and we thought about it two or three years ago—we had at the time about 10, 15 million drivers on the road and we actively started to involve them to get better quality information that we could then collect, process and share with the rest of our customers.

We asked customers, if they found an error in the map to record it and to fix that. But also to share those fixes with the rest of our user community. And we have a massive movement now with more than a million contributions every month of people who say, this needs to be corrected on your map, this has changed, can you please fix that?

By collecting all of that, applying smart algorithms to find what is right and what is not right, which corrections we trust and which corrections we don't trust so much, we have an active system where we involve our community to really make those maps better.

Another great example is that we ask our customers to passively contribute to making those maps better. And that is, by recording where they're driving and how fast they're driving because if you think about it, the key functionality of a navigation system of car navigation is getting from A to B in the fastest possible way. Efficient, reliable, trustworthy.

And the information you need to do that is very difficult to collect. It's about traffic jams, it's about traffic lights. It's about [gbar] crossings. It's about speed bumps. It's about schools that go out at a certain day. It's about traffic jams that are there every morning at the same time, but where are they, and can we rely on that?

It's impossible to go out and map all that. It's impossible to do the measurements. But if you involve your own user community, you can get a long way. And that's exactly what we do.



We are collecting huge amounts, a vast amount of information about where people drive and how fast they're driving. It's anonymous, don't worry about it. We're not interested in the driver; we're interested in the road, and that's the way we set it up. It's opt in. If you don't want to participate you don't want to participate. But guess what? Ninety percent of our consumers opt in.

And that results in a massive stream of information every day that we collect, analyze and put back into our maps as speed profiles. And those speed profiles are then used to optimize the routing from A to B for everyone who's using one of our devices. Unique technology, great idea. And guess what? It does work.

Drive as a local. Collect all that local knowledge through your instruments, through your 30 million computers that are out there. Collect that, process it and then distribute it again.

Jeroen van der Veer yesterday said Holland is a small country, and he said, if I put myself on the chair, I can see all the borders of that country. And that's right, we are a small country. But we are also, we're operating probably the world's largest car park.

Every Monday morning, the whole Dutch network, road network is completely blocked. It's one big traffic jam; you can't get anywhere. And it's not our mission to solve all that, but it is our ambition to develop technology and systems to map that, to build that information and make that information then accessible to the rest of the world.

And that is not easy, it's been...you know, this is a process that's traditionally seen as a task for governments. They spend a lot of money in roadside equipment. You have induction loops, you have cameras, you have all sorts of hardware that is put on the road network, operated by the governments at great capital cost and also at great cost to maintain all that. Millions and millions and hours alone.

I think the maintenance cost every year is five million. And I want to extend the system now with a proposed capital expenditure of 20 million euro. But the problem is you don't get anywhere because the road network is so diverse you need to know much more than what you can possibly collect with hardware based systems.

And we looked at that, and we came across a technology that was using information that sits intrinsically in the network of a mobile network operator. You know, we have mobile networks everywhere, handsets are everywhere. A lot of people travel with their handsets, and a lot of people travel with their car and their handset. And when they travel they travel from A to B, and they are linked by the network from one cell to another cell.



If you know that, you can observe certain patterns of switching of those handsets. And if you're related with a digital map, you can say, if this is what I see happening, then the only way I can explain that is because those cars are driving there with a certain speed. And if that speed drops below a certain threshold, then you're looking at a traffic jam.

And the beauty of this system is that it's cheap. It gives 10 times more coverage than traditional systems. It gives much more accurate information and much more timely information. Not only do you know that there is a traffic jam, but also you know how long it will take to get through that traffic jam. And that is exactly the information you need if you want to feed that information to the computer, and out of the computer, to do the optimization for the route planning.

And this has proven to be a fantastic technology. We're rolling that out in combination with Vodafone in the Netherlands, in France, in Germany, in the U.K., in Switzerland, in Belgium.

And we're hoping to make this a pan European service by the end of 2009. And if we achieve that, then we're very proud to offer everyone in Europe the most sophisticated detailed and accurate traffic information system anywhere in the world.

All that from a company that hardly existed a couple of years ago where we...where we put smart technology and smart people to work to really create value for consumers on an everyday basis.

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