Trafficmaster

Building the engine to drive smarter traffic

Overview

The Need
To empower drivers and fleet managers by providing real-time access to intelligently interpreted information from billions of data points collected from vehicles, roadside cameras and roadside sensors.

The Solution
Working with IBM and IBM business partner Integres, Trafficmaster built a solution to translate data into meaningful information, ultimately helping drivers to find the most efficient routes and avoid traffic congestion. It also provides other journey related services helping businesses manage their fleets.

What Makes it Smarter
By continually aggregating and intelligently interpreting historic GPS data, the solution is designed to allow Trafficmaster to offer improved services to drivers and fleet managers, also providing potential for developing innovative future services.

The Result
"Trafficmaster and IBM have a powerful partnership. We can provide a raft of new services based on the interpretation of vast quantities of telematics data. Working with IBM, we've unlocked previously unobtainable value from the information we gather and it's forming the root of everything we do."

– Stuart Berman, Executive Director at Trafficmaster

Across the world, road networks are struggling to cope with increasing numbers of vehicles. In the European Union alone, traffic congestion costs around €100 billion every year[1].

Helping drivers spend less time in traffic is just one of the challenges that Trafficmaster Plc aims to address through its range of navigation, fleet tracking and stolen vehicle tracking services. These services are provided through its telematics technology platform and in partnership with mobile phone operator O2.

Formed in 1988, Trafficmaster is a midsized business employing over 500 people in the UK and its US-based subsidiary Teletrac Inc. Its UK services rely on data feeds collected from black boxes in the vehicles of around 80,000 customers, numerous vehicle licence plate recognition cameras and 7,500 roadside sensors. The data collected constantly provides information on the flow of traffic on the national road network.

Stuart Berman, Executive Director at Trafficmaster explains: "As we continued to develop innovative services, it became clear that we had two main challenges. We needed to start collecting data from vehicles every 20 seconds rather than every 20 minutes. This represents an enormous increase in data volumes. We also needed to find a way of extracting greater value from our data, mining it intelligently in real-time."

Try and buy
To find a partner to help address these challenges, Trafficmaster conducted a rigorous selection process which included careful benchmarking. As part of this process, IBM and IBM business partner, Integres, worked closely with Trafficmaster to build a proof of concept. Hardware for a test system was provided through the IBM Try and Buy programme – at no cost to Trafficmaster – and IBM specialists carried out fine-tuning to ensure the system achieved the performance Trafficmaster was seeking.

[1] European Commission (2007), Green Paper: *"Towards a new culture for urban mobility"*

Benefits

- Shorter and more accurate journey times, which can help to reduce driver stress and fatigue and cut carbon emissions and fuel costs

- Greater efficiency for fleet operators through smarter route planning

- Introduction of on-demand business mileage reporting system provides easy access to accurate business mileage records

- Ability to intelligently process data enables the introduction of innovative offerings such as pay-as-you-drive insurance

- Solution is scalable and flexible, supporting the collection of increasing amounts of data and the provision of potential new services in the future.

Trafficmaster's solution for the retrieval and processing of driver location data, known as Geocore, forms the engine that powers many of the company's services. Improvements centred on implementing a combination of IBM hardware, software and storage to support Geocore.

"We had a very demanding set of requirements and several factors helped us choose IBM," confirms Berman. "Primarily the IBM team went the extra mile and left us in no doubt that their solution was going to meet our requirements and would be economic. The proof of concept demonstrated IBM's abilities very clearly and instilled a great deal of confidence."

Working smarter together

Integres implemented the IBM Informix® database technology and software which receives and processes the vast volumes of vehicle location data. After performing complex analysis of road speed data from diverse sources, the system transforms it into valuable information that can be transferred back to vehicles, mobile devices and control rooms in real-time to provide a wide range of telematics services for businesses and individuals. Experts from IBM worked with Trafficmaster's technical team to ensure that the database solution was optimally set to meet requirements.

The result is an excellent example of how successful partnerships can speed the introduction of smarter solutions. As Berman explains: "Although we are experts in vehicle data collection, IBM has skills in bringing that data into a structured format, analysing it and delivering it. IBM also has the system integration expertise to build sophisticated applications for our clients, helping us improve the appeal of our services."

Smarter Traffic   **Creating new value from telematics**

	Instrumented	Vehicle black boxes, licence plate recognition cameras and static roadside sensors transmit data on vehicle location and traffic flows.
	Interconnected	Data from vehicles and roadside fed into data warehouse for aggregation with information from GPS systems. Intelligence fed back to sat nav systems, vehicle black boxes and control centre.
	Intelligent	Intelligent analytics and processing combined with real-time and historic data help to enhance the driving experience and improve fleet performance.

Solution Components

Software
- Informix Dynamic Server (IDS) 11
- Studio JE
- Novell SUSE Linux® 10.1
- IBM Services for Information Management software

Servers
- IBM System x® 3950

Storage
- IBM System Storage™ DS 3400

Services
- IBM Software Group Services – Systems and technology

IBM Training
- Information management

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> – Stuart Berman, Executive Director at Trafficmaster

Cutting the cost of congestion

Smartnav, a personal journey management system, is a popular Trafficmaster service. It uses satellite navigation and live traffic information to calculate the best routes and to suggest alternatives when the route is congested. Information provided through the solution developed with IBM helps enable real road speeds to be logged so that accurately timed routing and estimated arrival times can be provided to Smartnav drivers. Services like this help drivers spend less time stuck in traffic, cutting the costs caused by traffic congestion and reducing carbon emissions associated with fuel consumption and idling.

"With the help of IBM Informix database technology, Trafficmaster is able to provide drivers with real-time route planning and more accurate estimated arrival times than ever before," says Berman. "And by providing drivers with better information about their journeys, we are able to help reduce the stress levels and fatigue often encountered on the roads."

The latest innovation to benefit from the partnership between Trafficmaster and IBM is the On-Demand Business Mileage Reporting system. This gives drivers access to an accurate record of their mileage through their Smartnav system or Trafficmaster's stolen vehicle tracking system known as Trackstar. The On-Demand Business Mileage Reporting system recalls all journey start and end locations, the time taken to make the journey and the exact distance travelled. Drivers can see exactly where their car was at any given time and simply have to classify the journey as business or private mileage.

Unlocking value

Now the efficient processing of valuable data is in place, Trafficmaster has released enormous potential for further smarter driving solutions, particularly in areas such as pay-as-you-drive insurance. Opportunities are particularly strong in the US and, as part of its partnership with IBM, Trafficmaster is exploring deploying pay-as-you-drive services in geographies outside of the UK.

Berman values the competitive advantage that comes from being able to offer relevant new services to a wider range of clients. He says: "Trafficmaster and IBM have a powerful partnership. We can provide a raft of new services based on the real-time interpretation of vast quantities of telematics data. Working with IBM, we've unlocked previously unobtainable value from the information we gather and it's forming the root of everything we do."

For more information

Please contact your IBM representative or IBM Business Partner.
Visit us at: **ibm.com**/cio/uk

IBM

IBM United Kingdom Limited
PO Box 41
North Harbour
Portsmouth
Hampshire
PO6 3AU

Tel: 0870 010 2503
ibm.com/services/uk

IBM Ireland Limited
Oldbrook House
24-32 Pembroke Road
Dublin 4

Tel: 1890 200 392
ibm.com/services/ie

The IBM home page can be found at **ibm.com**

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