# Predictive behaviour analysis in trucking:
## What does it all mean?

Work-related crashes involving trucks represent a serious threat to both truck drivers and other road users. But with the right data, firms can work toward predicting and preventing future motor vehicle incidents (MVIs).

There are many reasons why transportation firms want to know what's around the next turn. Foreseeing what might happen in the future may sound like the work of a fortune teller and a crystal ball. However, using a new technology called telematics, companies can predict driver behaviour and prevent injuries or fatalities.

## New technology

Telematics is used in predictive behaviour analysis, which is a system that allows health and safety specialists to gather and analyze data in order to identify the situations where MVIs are most likely to occur. Good planning can mean efficient use of both the equipment and the employees' time, allowing firms to take their operations and driver safety to new levels.

With telematics technology, employers can collect real-time data from actual driving experiences and identify patterns in driving behaviour and equipment performance. That can help them decide where operating procedures and training are needed the most. It will also ensure the training is relevant to real-world conditions.

## Predicting collisions

In 2005, the American Transportation Research Institute (ATRI) designed and tested an analytical model for predicting a driver's future involvement in a crash on the basis of a person's driving history. This model was updated in 2011. The 2011 results show that a conviction for "failure to use/improper signal" was the biggest predictor, increasing a truck driver's likelihood of a future crash by 96 per cent. Drivers who had a past crash had an 88 per cent increase in their likelihood of a future crash.[*]

When ATRI compared the results from the 2011 study with 2005, they noticed that the relationship between driving history and future crashes was considerably lower in 2011. A prime example is reckless driving. In 2005, it was the number-one problem, associated with a 325 per cent increase in crash likelihood. However, in 2011, it was number 10 with a 64 per cent increase. These findings suggest that once problematic driving and operating practices have been identified, carriers and enforcement agencies can address those issues, thereby lessening their link to future collisions.

## Improving safety

Other information made available by new technologies includes data on engine performance, fuel consumption, and hours of service, as well as evidence of following too closely, excessive lane changes, and hard braking. Just by making drivers aware that their driving will be monitored will cause them to drive more safely.[†]

While this information is helpful, observing driver behaviour and testing driver knowledge on a regular basis is still needed. Demonstrating that the knowledge has been absorbed is also crucial. For example, are the safe habits learned during training still being practised months later? Using technologies such as telematics can help answer those kinds of questions.

Training both employees and supervisors is an essential element of workplace safety. This training, along with observations of drivers and data mining by means of telematics technology, can identify training gaps or potential operating hazards and help create a comprehensive driving program.

[*]Micah D. Lueck et al., *Predicting Truck Crash Involvement: A 2011 Update* (Arlington: ATRI), p. 15.
[†]"Managing driver behavior with fleet telematics," website of Telematics Update, accessed May 7, 2014, http://analysis.telematicsupdate.com/fleet-and-asset-management/managing-driver-behavior-fleet-telematics