TELEMATICS AND UBI: THE DATA CHALLENGES

By Jessica Royer Ocken, Contributing Editor, Telematics Update*

* This article expresses the opinions of the author and is being included in the Newsletter to alert policymakers on emerging trends in usage-based insurance. It is not meant to represent the position or opinions of the NAIC or its members, nor is it the official position of any staff members.

As usage-based insurance (UBI) enters the mainstream, the methods used to collect and analyze driver data present potential challenges. Consequently, insurance companies must clearly articulate the goals of their UBI programs.

Those seeking to better customize policies will take a different path than those seeking to improve driver behavior. The nature of the UBI program will also determine the answers to other questions, such as: What types of data are needed? How should data be collected? And crucially, says Christopher Wilson, insurance companies must determine whether they want to be in the “data processing and retaining business.”

In other words, will they manage the data on their own or choose a third party to assist?

Although the transition can be daunting, UBI can be cost-effective and appealing to drivers as well as potentially making the roads safer. “There’s a huge value from this,” says Wilson. “There are ways to really differentiate between good and bad driving and ways to feed that back.”

**DATA USE**

UBI is not a one-size-fits-all solution, so insurers should begin by defining their goals. Do you want to leverage policies based on the number of miles someone drives? How much weekend driving do they do? Whether they drive at night? Whether they drive on highways versus residential streets?

Or will you examine the way your insured drivers behave behind the wheel? This approach could be used to weed out bad drivers or to help drivers improve. Depending on the choice, insurers will need different equipment, different applications, and different data plans.

There are a number of data collection schemes. GMAC uses a minimalist approach that examines little more than where drivers are located and what time they are on the road. That’s not a lot of data, and it can be compressed for transmission.

Other companies add acceleration data. Do drivers accelerate a lot? Do they decelerate rapidly? These factors can be used as a “surrogate for accidents,” according to Wilson. That data collection is also fairly simple. The insurer receives a report saying a driver accelerated hard X times a day or X times in 100 driving hours.

However, to analyze detailed driving patterns, more complex data is needed. This is a larger undertaking, but it is expected to enable insurers to distinguish really good versus pretty good and fairly good drivers. This, in turn, will allow them to tweak policy rates and provide feedback to drivers—perhaps through a green/amber/red light on the dash and via follow up reports highlighting problems.

“It’s a lot more data coming in, which means more ability to compare data to actuarial records and claims history and across drivers,” Wilson notes.

**DATA COLLECTION METHODS**

Having such data can be an asset to insurers, but there must be a convenient, cost-effective means by which to collect it. Devices that require professional installation may work for commercial UBI applications, but individual drivers are less likely to comply. Instead, the OBD dongle, a newly developed wireless scan tool, looks promising for consumer-level UBI. This will allow insurers, for the first time ever, to ship a telematics box by mail.

In addition to providing diagnostic data, the OBD (On-Board Diagnostic) system reports the car’s VIN, which can help insurers verify that the car they have insured is the car from which they are receiving data. Although smartphone applications offer some possibilities for insurance data collection, their portability can make vehicle verification and accurate sensor data difficult. In some cases, the connection may not be reliable enough. And what happens if the driver forgets his or her phone—on the day of an accident?

Another consideration is the ability to filter and preprocess data. It takes a lot to do driver profiling—GPS, gyroscope, acceleration, and perhaps even more. “And you don’t want to send [all that data] over the air,” notes Cyril Zeller, a senior sales director for the global telematics segment of Telit. Instead, the in-vehicle device should be sophisticated enough to perform the filtering and preprocessing.

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enough to differentiate between a reading of 0.01 G (a non-event) and 3 Gs—and only transmit the latter.

Some companies have a ‘black box’ they ask drivers to keep in their vehicles; GMAC collects data through OnStar. It’s not a deeply integrated system at this point, but it could be. Original equipment manufacturers (OEMs) might help with this process, by integrating more sensors into the embedded system or OBD port, for example, in exchange for a cut of the insurance. Most are watching GMAC, though, to see if a business model emerges.

**DATA MANAGEMENT**
The final piece of the data puzzle, and perhaps the most daunting for insurance companies, is how to deal with all the collected information. Insurers keep everything for backup and liability reasons, but the influx of UBI data could be overwhelming.

Some insurers opt to have a third party collect the data, process it, and develop a ‘score’ to rate their drivers. Several companies are now filling this niche. In some cases, the insurance company provides the algorithm to be applied to the data; in other cases, the partner handles that as well. One still unresolved question: How does this score translate into rates? “There’s a lot of work to be done on the actuary side,” Zeller explains.

Whatever their goals for UBI, insurance companies are realizing they could do a much better job with more data, and more sophisticated data. Although it will cost more the benefits over the next 10 years are expected to outweigh the costs.

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