Shippers Map Route to More Accurate ETAs

By William B. Cassidy, Senior Editor

SUPPLY CHAIN VISIBILITY INCREASINGLY IS A MOVING TARGET, AND MAPPING TECHNOLOGIES NEED TO BE FLUID AND FLEXIBLE TO PROVIDE ACCURATE, REAL-TIME VISIBILITY, ACCORDING TO RISHI MEHRA, STRATEGY EXECUTIVE AT TRIMBLE MAPS.

That's going to require greater integration of data from various systems, including electronic logging devices (ELDs), Mehra told JOC.com in an interview.

When shippers say they want better visibility, what they often want is a more exact estimated time of arrival for a shipment, Mehra said. "ETA is a big thing. Some customers are requiring shippers to schedule deliveries in 15-minute windows, with advance notice of arrival times," he said. "That results in much more friction between the shipper and carrier."

Trimble MAPS, formerly ALK Technologies, is using its commercial mapping technology to reduce that friction, combining data from ELDs, shipper transportation management systems (TMSs), and carrier dispatch and routing systems in an automated trip management system that can provide dynamic ETAs to customers that adapt as conditions on the road change.

It's an example of knocking down barriers that have kept pools of data in separate silos and integrating them to provide an interconnected view of the supply chain. "Visibility is really having full idea of where the freight is, where it's supposed to be, when it's supposed to arrive," Mehra said. That's more than knowing the shipment is at mile marker 50 on I-95 in North Carolina.

Emphasis on ETAs has been growing alongside e-commerce, Amazon.com, and Walmart, which pioneered the practice of charging vendors penalties for missed deliveries. The factors affecting ETAs often are not well understood by all parties in a supply chain transaction, Mehra said. They include driver hours of service, weather, road conditions, speed, and parking.

"People think of traffic congestion having an impact on ETAs, but when you combine things together, you have not only traffic but remaining driver hours of service on their daily and weekly logs and driver break times to factor in," said Mehra. "And then weather also plays a big role. So, we try to model all these factors and monitor them, and measure ETAs based on live conditions."

Sometimes, major rifts occur when shippers and carriers use different mapping technologies that model conditions differently to calculate ETAs. "People will ask 'why can't I just use Google Maps or Waze?,'" Mehra said. "The first thing is that those programs don't have truck-specific routing. And the way Google calculates traffic speeds is based on automobiles, not trucks."

Trimble factors separate truck speed limits and the impact of engine governors that limit truck speeds into its live traffic data and forecasts, he said. "We'll know the jurisdictions that have trucks traveling 10 miles below speeds posted for automobiles," said Mehra.

"Google may say the truck will be there at 2 a.m. and the carrier's data shows a different ETA based on hours of service and truck travel speeds," he said.

ELD mandate sharpened focus on ETAs

The introduction of the ELD mandate in 2017 put more emphasis on accurate ETAs by eliminating "sloppy" log keeping and forcing truck drivers to adhere to daily driving time limits and the requirement they take a 30-minute break after eight hours of driving. That was a wake-up call for shippers who had remained ignorant of trucker break and driving times.

"Suddenly, you could no longer do a 500-mile trip in 10 hours," Mehra said. Knowing when and where drivers would take their required breaks became important to shippers struggling to get more accurate ETAs, as did wait times at pickup sites and available parking. With the ELD mandate, "you could see how much drag there is on productivity across the system," he said.

Trimble began incorporating ELD data into its web-based trip management platform, adding available hours on driver clocks to GPS location data and other information, including data on driver behavior when truckers run the same route on a regular basis. "Some data was readily available, and some wasn't because people just hadn't been thinking along those lines," said Mehra.

Trimble takes shipment data from shippers' TMSs and dispatching and ELD data from carriers. "Once we were able to get the driver hours of service data, we could calculate initial ETAs and let carriers and shippers know whether a move is feasible or not," Mehra said.

Through the cross-platform integration, everyone uses the same standards and sees the same data.

"That can prevent cascading errors," Mehra said. "If the shipper is looking at different data points, different ETAs, they can have people set up to unload the trailer on the dock, and they won't be there at the right time. From having people sitting idle to not having the truck ready for the next move, all that has negative cascading effects throughout the ecosystem."

Sitting behind all the trip data is mapping technology that must be updated regularly as delivery requirements get more specific. "It is very important to have any additional data you can capture, and not just the base road network data, that's almost a commodity play," Mehra said. "Having a road is one thing. If you have the number of lanes, that's much more useful."

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