

CSCMP hottopics

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Paving the Way to Safer Roads with a Digital Freight Network

By Lorin Seeks, Convoy

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Educating and Connecting the World's Supply Chain Professionals.™

Convoy recently announced our new predictive crash capability that uses machine learning and automation to qualify safe drivers into our network, yielding 16% fewer accidents vs. the industry average. This not only helps keep the roads safer, but it also enables us to increase on-time deliveries and cost savings for shippers, with lower claim rates and fewer cargo incidents. Commercial crashes are one of the major contributors to cargo loss, which is estimated to exceed \$50 billion globally every year. Today, Convoy experiences a cargo claim less than once per 2,000 loads, whereas the industry experiences a cargo claim about once per 100 loads.

RISKS IN TRUCKLOAD TRANSPORTATION

Shippers want access to a network of reliable, safe carriers, and yet obtaining the data, tools, and resources necessary to assess carrier safety has been a traditional problem for brokers, asset-based carriers who broker loads, and freight networks. This problem is only becoming more urgent, as rising insurance premiums and compensatory payments from accidents increase shippers' financial exposure.

The most widely used carrier safety information comes from the Federal Motor Carrier Safety Administration's (FMCSA) Carrier Safety and Accountability (CSA) program, which was never designed for private sector use in the carrier selection process, and is not predictive; rather, it was solely intended for reactive intervention by enforcement authorities. The CSA generates overall ratings of Unsatisfactory, Conditional, or Satisfactory; however, 95% of carriers nationally are unrated. Having this many carriers without ratings severely limits visibility into the vast majority of safety records. In addition, the underlying methodology of how these ratings are assigned produces misleading results. For example, to obtain a Satisfactory rating, carriers must go through a full review. The challenge is that only carriers with a considerable number of safety violations qualify for a full review. This means that some carriers with Satisfactory ratings are actually lower-performing and riskier than carriers who are unable to get a full review and thus are not rated. Shippers using CSA ratings to identify safe carriers are relying on a blunt tool at best, and in many cases, are being steered in the opposite direction of safety.

SAFETY IN NUMBERS

By contrast, we're solving this problem by using big data, machine learning, and automation, which are hallmarks of a [digital freight network](#). We start by gathering extensive carrier safety and compliance data, and then apply machine learning to predict which carriers are likely to get into accidents. Our algorithm processes thousands of inputs—such as carrier crash history, vehicle maintenance, and speeding and traffic violations—across millions of records spanning the past 10 years, ultimately producing individual scores for the tens of thousands of carriers in our network. We then use automation to analyze compliance with those scores within seconds, every day, with every load to either qualify or disqualify carriers to haul loads. Our model gets smarter over time, driving continuous improvements as more data is generated, providing shippers with increasingly high levels of safe and reliable carriers.

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COLLECT CARRIER DATA

Convoy combines rich carrier data from government, insurance, and safety organizations with our own digital freight network statistics.

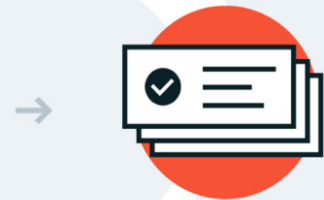


IDENTIFY SAFEST DRIVERS

Machine learning processes thousands of inputs across millions of records spanning the past 10 years to identify carriers who are least likely to crash.

VERIFY SAFETY STATUS

Through automation, we vet the tens of thousands of carriers in our network against our rigorous standards, daily, with every load.



A SAFER CARRIER NETWORK

As a result, Convoy carriers have a **16%** lower crash rate with **20x** fewer cargo claims vs. the industry average.

About CSCMP Hot Topics

Issues of *CSCMP Hot Topics* may include early results from ongoing research being conducted for CSCMP or other organizations; new supply chain practices, thought-provoking ideas, or emerging trends; discussions of changes in the broader business and regulatory environment that may impact the supply chain and logistics field.



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SHIPPERS BENEFIT FROM THE SAFEST CARRIER NETWORK

Since our founding in 2015, Convoy has developed machine learning models to automate otherwise manual processes. Last November, we announced raising \$400 million to accelerate the development of first-to-market products and technologies focused on improving efficiency in trucking. Our recent announcement is the latest example of progress in this effort, and how a digital freight network can use technology like machine learning and automation to not only efficiently match shippers to carriers, but also to make sure we're moving **full truckload freight** in the safest way.

To learn more about our rigorous safety standards, visit Convoy's [quality and compliance](#) page.

If you're a shipper who is interested in starting to work with Convoy, please [contact us](#), and we'll be in touch soon.

ABOUT THE AUTHOR

Lorin developed a passion for logistics as a Captain in the US Army Transportation Corps and never looked back. He has spent his career engaged in various supply chain focused roles for both carriers and shippers, to include leading the North American Transportation Operations team at Starbucks. Lorin holds an MBA and a MS in Supply Chain Transportation and Logistics from the University of Washington, where he is on the advisory board of the Supply Chain Transportation and Logistics Center. He is currently the Director of Carrier Quality and Compliance for Convoy.