

A photograph of several white 18-wheeler trucks parked in a lot, overlaid with a teal gradient. The title text is centered over this image.

# Bendix Delivers BI for 18-Wheelers, a Game-Changer for Transportation Technology

## Summary

Bendix Commercial Vehicle Systems partnered with Base2 Solutions to create a sophisticated, business intelligence (BI) web portal to revolutionize the transportation industry.

The portal takes near-real-time truck data and converts it to actionable reports and alerts. This portal allows fleet managers to identify and document dangerous situations and bolster driver behavior.

### *Results*

Fleet operators have found the portal invaluable in meeting federally mandated safety rules, emissions standards, and conserving fuel costs. They finally have detailed, near-real-time insights into what's happening on the road with their trucks.

Most modern 18-wheelers are equipped with enough safety monitoring technology to make your head spin: collision avoidance systems, tire pressure monitoring systems, electronic stability, and other sophisticated gear to ensure that the truck stays in its lane, goes the right speed, follows at the right distance, maximizes fuel efficiency, and much more.

Abundant data is great, but the ability to collect all that data came way before the ability for fleet managers to make sense of it. In 2009, Bendix realized that it was only solving half the problem for its customers—operators of trucking fleets.

Bendix

## Onboard Safety Systems are only Half the Solution

Its onboard safety systems captured volumes of truck safety data, but it generally amounted to meaningless piles of data on their servers. Also, data wasn't transmitted in real time; it was "dumped" from trucks to data ports once a day when truckers ended their runs. There was missed opportunity by not being able to have immediate alerts on equipment in motion.

Bendix wanted to relay customer data in real time to help capture even more data—on both truck and driver behavior. They wanted a BI web portal to organize and present the data, make it actionable, help fleet managers prevent accidents, strengthen driver training, monitor equipment, and otherwise improve their operations.

## Rapid Development

Bendix hired a web development firm to create a web-based BI portal, but the firm was quickly bogged down in data quality issues. Incoming truck data was often incomplete or unclear, often presented out of order, and required significant processing before it could be archived—skills the web shop did not have.

Bendix called in Base2 to help get the project back on the road. Base2 offered extensive BI and data management expertise and understood how to design a robust database-driven BI back end as well as an elegant, easy-to-use front end.

## Managing Turbulence

Base2 began by developing data-cleansing algorithms to bring order to the jumble of information. They designed a forward-looking BI framework that would accommodate existing data as well as data for future technologies.

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Base2 implemented the portal using Microsoft ASP.NET and Microsoft SQL Server and hosted it in the cloud to reduce infrastructure costs and speed deployment.

In just two weeks, Base2 had a proof of concept up and running. In six weeks, a production system deployed. Over the course of the next five years, Base2 provided ongoing support to enrich the portal interface, update and upgrade as new technologies came along, and scaled the back end to deliver greater performance and reliability. Base2 also provided BI, data warehousing, and data management training so that the customer could maintain the portal self sufficiently.archived—skills the web shop did not have.

## Real-Time Eyes on the Road

The Bendix BI portal now provides fleet operators with a comprehensive, real-time view of their trucks and drivers so they can address potential problems before they occur. The company's truck safety systems wirelessly transmit data to the cloud where the web portal organizes, analyzes, and presents the data as insightful charts, graphs and alerts.

The portal alerts fleet operators if a driver is having difficulty staying in their lane—often an early indicator of driver drowsiness. The driver can be contacted before an accident happens. There are also in-cab audible warnings if the driver gets too close to the vehicle in front or begins to drift out of their lane. This information, along with alerts, help fleet managers identify risky behavior and provide training to reinforce safe driving practices.

The web portal captures and reports events in more than a dozen preset categories, including excessive curve speed, lane changes without turn signal, and forward collision warning. Fleet operators can create

reports for individual drivers or the entire fleet. Reports of specific safety incidents are replete with incident time and data, driver and vehicle ID, odometer reading, vehicle speed, GPS location, and even video clips.

Fleet operators have found the portal invaluable in meeting federally mandated safety rules, emissions standards, and conserving fuel costs. They finally have detailed, near-real-time insights into what's happening on the road with their trucks.

## A Safer Road Ahead

We all reap the benefits of safer roads and a more efficient transportation industry.

For Bendix, the near real-time capabilities paired with the safety system's pioneering technologies make the BI portal the only tool like it on the market. Bendix has been extremely successful with this competitive advantage.

The trucking companies, the users of this product, are able to optimize their operations to save time, money, and most importantly, countless lives.

### Bendix

Bendix Commercial Vehicle Systems, a member of the Knorr-Bremse Group,

develops and supplies leading-edge active safety technologies, energy management solutions, and air brake charging, and control systems and components under the Bendix® brand name for medium- and heavy-duty trucks, tractors, trailers, buses, and other commercial vehicles throughout North America. To learn more about Bendix, visit [www.bendix.com](http://www.bendix.com)



Base2 assists companies in giving form to Digital Innovation

and delivers the processes and practices needed to develop complex interconnected systems. We help companies solve challenging problems by taking a whole systems approach to designing and developing the technology, processes, security and Systems Engineering required for success. Companies across heavily regulated industries, such as aerospace, defense, transportation and medical devices, have utilized our expertise and best practices to speed up product development and accelerate time to market. To learn more about how Base2 helps drive Digital Innovation, please visit [www.base2s.com](http://www.base2s.com).