Cascade Sierra’s mobility solution has truckers seeing green

About Cascade Sierra Solutions
Cascade Sierra Solutions (CSS) is an Oregon-based nonprofit company dedicated to saving fuel and reducing emissions from heavy-duty diesel engines. Founded in 2006, the organization helps small trucking firms and individual owner/operators understand, choose, and finance newer trucks and technologies they need to comply with tougher local and state restrictions on diesel emissions. In just over five years, Cascade Sierra has helped more than 9,500 truck owners located in the continental U.S. and Alaska improve their fuel efficiency and reduce harmful exhaust emissions. Projects are now saving over 35,000 gallons of diesel fuel every day with a combined savings of over 44 million gallons.

Situation
Government agencies, which help truckers buy cleaner and more efficient vehicles, expect a return on their investment. They want to know how many miles these vehicles travel, where they go, how much fuel they consume and how cleanly they run. These data points help them calculate the progress truckers are making. CSS needed a solution to deliver this information for truck owners, public agencies and for its own use.

Solution
Cascade Sierra uses Webtech Wireless units to automatically track and report vital information from each vehicle. The units can report truck location, speed, fuel consumption and much more over the AT&T wireless network. The reports generated from Webtech Quadrant give Cascade Sierra the data needed to ensure funders, truck owners and pollution control agencies that trucks are being used as required, and goals are being met.

Something in the Air
There was something in the air that focused Sharon Banks on trucks – and it wasn’t good. As Chief Financial Officer for the small air quality agency in Lane County, Oregon, Banks learned that pollution in the area didn’t come only from old wood stoves and outdoor trash fires. Mobile sources of pollution – such as diesel exhaust from school buses and trucks – were a big issue, and hard to control.

“Diesel exhaust can cause a lot of health problems, especially with kids and the elderly,” she said. “There are more than 40 toxic substances that adhere to the surface of diesel particulates. It’s just one of the most horrible toxic pollutants out there.”

As she dug into the problem, Banks learned that many solutions were available to reduce diesel truck pollution and, at the same time, save fuel. Yet truckers were slow to adopt those technologies. Banks wanted to know why.

“I found out that the majority of businesses in the United States that haul freight are small businesses,” she said. “According to the American Trucking Association, 96 percent are owners of 20 trucks or less. It’s a highly fragmented industry and a lot of the really small firms are not highly educated on fuel efficiency. They are so busy working that they don’t have time to research the technology options.”

Cascade Sierra Solutions Facts

Business Needs
Track and record location and performance of motor trucks in real time

Networking Solution
Webtech Wireless fleet management system delivers truck performance data via the AT&T wireless network

Business Value
Ability to develop detailed reports of truck and fleet performance for use by drivers, fleet owners and funding agencies

Industry Focus
Non-profit supporting the trucking industry

Size
1,000 trucks fitted with the solution
These small owner-operators, which include immigrants who take advantage of the relatively low barriers to entering the trucking industry, faced other challenges. Even after they learned the benefits of new low-pollution engines and fuel-saving features such as easy-rolling tires and airflow-smoothing trailer skirts, financing such improvements was a huge roadblock. Many operators came from cultures where cash was king — they had no credit history. Others simply couldn’t prove to conventional lenders that they had the cash flow to pay tens of thousands of dollars for a truck that met the latest state and local clean air standards.

“The vocation doesn’t pay very well and it’s primarily made up small mom and pop businesses,” Banks said. “They are very thinly capitalized and have very low access to funds.”

A Special Appreciation for Truckers

By helping truckers cut pollution and reduce fuel costs, and using her financial background to help them pay for those improvements, Banks saw a way she could make a difference. In January 2007, nonprofit CSS opened its first small outreach office in Oregon. As Banks met with the truckers, her respect grew.

“I got to know so many of them,” she said, “and they were just wonderful people that would give you the shirt off their backs. There are a lot of them that I know really do care about the environment, they care about America and they want to be sustainable as well.”

CSS serves as an information hub and financial resource. Contacting truckers now through eight outreach centers (seven on the West Coast, and one in Charleston, South Carolina), the organization provides information on the many technologies available to trim truck pollution and fuel use, helps owner-operators decide which improvements make sense for them, and helps them identify funding sources and qualify for financing.

Updating their rigs from old, soot-spewing models to cleaner ones that meet the latest EPA standards can make a big difference. A new truck can get up to 25 percent better fuel efficiency than the old truck it replaces. All new trucks filter out 85 percent or more of diesel particulate emissions. In addition, truckers can choose from a wide range of efficiency boosters under the EPA SmartWay Transport Partnership — including improved aerodynamics, reduced idling time, more efficient tires, and better load and route management.

A Way to Pay...and Prove Your Performance

But paying for such upgrades can be a challenge. “Those are not the favorite loans for banks,” Banks said, “because there’s a small dollar value. Applicants are going to require a lot of technical assistance and hand-holding. So, that’s what we do – it’s our mission to make these guys successful.”

Loans are available, and a number of public agencies, such as the Port of Seattle and agencies in California, provide grants to help truckers upgrade. CSS assists in the process. “We help them with all the paperwork,” Banks said, “and it can be a lot of paperwork the average guy doesn’t have the skill set to fill out.”

A key factor — especially for government grants — is to verify that the upgraded trucks are helping cut pollution in the location targeted by the funding jurisdiction. One grant program in California, for instance, requires a truck be “based in California and drive most of its miles in California.”

Increased Data, Expanded Possibilities

To prove trucks are driving where they should and provide a complete picture of vehicle performance, CSS installs a GPS-enabled automatic vehicle locator in each vehicle it leases. This transmits truck location and performance data through the AT&T wireless network to CSS computers. The reporting systems are mandatory for CSS clients because of the possibilities they provide.

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– Sharon Banks, CEO, Cascade Sierra Solutions

For starters, they assist in the qualification for geography-based funding. “You have five or six entities in California that want to know how many miles are being traveled in their geographical fence,” Banks said. “If you apply for their money, you have to provide proof that you are going through their regions. With the GPS we can monitor where they’re traveling, not just in California, but where in California. That way we can actually apply for additional funds that might be available.”

Because Webtech Quadrant can get information directly from the truck’s engine control module, CSS can easily view reports on fuel consumption, speed, idling time, location and other critical factors.

“We’re going to use that data for a lot of different purposes,” Banks said. “We have a pretty big sample size of port truck data and will be looking at trends over time to see how things are changing in the marketplace.”

Reporting also assists with managing an entire fleet of vehicles that are independently owned and may have never been part of one system,” Banks said. “With this solution, they can get visibility into their owner operators, see the trucks that are coming back in and be more prepared to have a load ready to go. It’s really improved the efficiency for the motor carriers.”

Lastly, there is added protection against theft. “We have several stories of equipment being stolen,” said Emilio Garcia, who manages the CSS center in Fontana, California. “My GPS actually draws a map for me from when they began playing with the ignition, started the truck and left the driveway. We’ve actually backtracked on the map and were able, with police assistance, to find our parts and accessories that had been taken from trucks.”

“It’s a win-win for everyone,” added Banks. The fleets save money, gain a competitive advantage, and provide a healthier work environment for their driver and for the rest of us.”
Adding the Gains
Reporting over the AT&T wireless network, the Webtech Wireless units provide the kind of reliability CSS, the drivers and the funding agencies can rely on. “We’ve never really experienced any troubles with our signals,” Garcia said. “We’ve had great results with our AT&T service.”

In this business where the numbers really count, the data gathered from each Webtech unit (1,000 are now installed) is adding up. In 2010, CSS secured 535 grants for truckers in the ports of California – each worth $50,000.

“Because you’ve received a grant you know that this is going to help you,” said Garcia. “We can do the grant reporting for you, or assist you whenever you need some information. We just ping your VIN number and we can give you daily, weekly, monthly and annual reports.”

“It not only helped them get into a clean and more fuel efficient vehicle, but it also saved their livelihood,” Banks said. “They wouldn’t have been able to keep working without getting that grant. It’s helped their business tremendously. We’re seeing 1099 income statements for the truck drivers in the area that have almost doubled since the ’07-’08 time period.”

The environment too is gaining, and there’s room to grow. “We’ve done about 9,500 vehicle upgrades and replacements,” said Banks. “We’ve saved about 44 million gallons of fuel and taken about 440 thousand metric tons of carbon dioxide out of the air. Every day we’re saving about 350 tons of carbon. In reality 9,500 trucks is not a big number. There are 11 million commercial vehicles registered in the United States. Just imagine the possibilities.”

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