The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

YEAR:
2012

STATUS:
Laureate

Organization:
SmartDrive Systems Inc.

Organization URL:
www.smartdrive.net

Project Name:
SmartDrive Safety

What social/humanitarian issue was the project designed to address?
What specific metrics did you use to measure the project's success?

SmartDrive Safety was created to help commercial drivers improve their driving performance, by providing them with in-depth understanding and greater awareness of how they are actually driving. SmartDrive's unique video-based fleet safety program enables drivers and fleet managers to get a true picture of what's really happening on the road, pinpointing areas for improvement, reinforcing good driving practices, and providing tools for coaching, all with the goal of improving driving performance. By putting better drivers on the road, commercial fleets better protect their drivers and reduce the frequency, severity, and financial impact of collisions, saving lives and reducing injuries. And they are more environmentally responsible, reducing fuel consumption and carbon emissions. The Safety system collects and instantly analyzes vehicle sensor data and video to quickly deliver valuable driving intelligence. The SmartRecorder3 video-based vehicle recording system monitors driving actions such as swerving, speeding, and sudden stops. When unsafe maneuvers are detected, the SR3 captures video of what occurred on the road and in the cabin for 30 seconds before and after the event. Recorded events are downloaded wirelessly and sent to professional safety reviewers, who categorize and score the events. Lastly, results are used in online coaching to improve fleet performance and overall driving safety. In-cab LED lights give drivers immediate feedback on their performance. Triggered by hard cornering, harsh braking, sudden acceleration, excessive speed and other measureable maneuvers, the lights indicate when vehicles are being driven outside acceptable parameters, allowing drivers to adjust their driving in real time. Interestingly, safe driving also translates into smooth driving, which

results in lower fuel consumption and reduced carbon emissions. Fleets measure and monitor individual driver performance on an ongoing basis. Data epochs are compared and improvement measured, permitting us to track and document safety improvements over time.

Please describe the technologies used and how those technologies were deployed in an innovative way. Also, please include any technical or other challenges that were overcome for the successful implementation of the project.

A multi-disciplinary team of safety specialists, hardware engineers, user interface and work flow design engineers, web developers, video analysis experts and CRM professionals developed the SmartRecorder3 platform, which provides immediate feedback to drivers on risky events and overall performance trends to fleet managers. This unique video- and data-capture and analysis system provides a comprehensive view and understanding of what actually happens on the road and in the cab. The SR3, an all-in-one safety, efficiency, and fleet management platform, is installed in each vehicle. This video and data recorder required advanced industrial design to minimize windshield obstruction and maximize sightlines for the driver. The system employs proprietary algorithms for triggering data capture, and trained reviewers for rapidly analyzing and prioritizing data. The system architecture is extensible and will accommodate additional, future functionality. Once installed, the SR3 records information about the performance of the driver and the vehicle, including video events, acceleration, speed, and engine data, location, health checks, etc. Highlights of the in-vehicle data recorder and instant driver feedback platform include: high-quality video, 752 x 480 resolution; multi-axis accelerometer (G-force) sensor; dual-lens camera system with 120 forward view and wide-angled 160 cabin view; infrared illumination for nighttime and low-light cabin video; built-in microphone; integrated GPS receiver; onboard storage for at least 200 event files; integrated LED lights for instant driver feedback; manual activation button; ISO 9001:2000 certified design and manufacturing process. Transmitted securely to prevent altering/editing the information, all data is uploaded automatically and wirelessly to the SmartDrive Data Center, via either Wi-Fi or cellular, depending on business objectives and driving patterns. Quick capture, transfer and analysis of data mean that the fleet manager can swiftly identify and address driver training issues and improve driver performance.

Please list the specific humanitarian benefits the project has yielded so far.

SmartDrive Safety improves driving performance, putting better drivers on the road and reducing the frequency and severity of accidents and incidents, saving lives and reducing injuries. SmartDrive customers: 1) Reduce collision frequency by 50% or more. 2) Get visibility to cell phone use, texting and other driving distractions. 3) Exonerate drivers from fault when collisions occur. 4) Decrease liability, physical damage, and workers comp. 5) Quickly and accurately resolve claims and reduce fraud. 6) Improve eco-driving performance, reducing both fuel consumption and carbon emissions. SmartDrive has compiled a database of more than 34 million recorded risky driving events, the world's largest such storehouse of driving data. This provides the basis of analysis that looks at driving performance across the entire field of drivers participating in the SmartDrive Safety program, drivers from a diverse mix of industries ranging from public transit and waste management to long-haul trucking and armored transport. Their driving experiences, as captured in data and on video, provide a rich understanding of trends in commercial driving and present a unique opportunity to assess the impact of driver training and coaching techniques on driving performance. The landmark SmartDrive Commercial Transportation Fuel Efficiency Study documented the opportunity for commercial transportation fleets to improve fuel consumption by as much 22% by implementing eco-driving techniques which prompt drivers to accelerate more smoothly, brake more evenly, and reduce driving speed. Fuel consumption reduction on this scale not only means cost savings for fleet operators, it means a 22% reduction in carbon emissions for the environment. The company's Distracted Driving Index chronicled the incidence of distracted driving events captured by the SmartDrive

Safety system during 2010. The study tracked more than 34,000 commercial drivers and 13.8 million video events, revealing that training can reduce the incidence of distracted driving by more than 36%.

Please provide the best example of how the project has benefited a specific individual, enterprise or organization. Feel free to include personal quotes from individuals who have directly benefited from the work.

"SmartDrive is another arrow in our quiver to help reduce losses. By reducing the number of accidents, we reduce the likelihood of injuries on the job and to the general public. It's all about going home safely." - David Keyser, Western Region Risk Manager, Loomis USA. Following the deployment of the SmartDrive Safety system in its 3,000 vehicle fleet, the Loomis armored transport company reduced collisions by 53%, speeding incidents by 53%, driving distractions by 65% and non-use of seatbelts by 68%. "SmartDrive is the best tool on the market for collision management and changing the culture of any higher risk drivers. I would highly recommend it to any fleet in the UK." - Steve White, Interim Fleet Manager, Reynolds Catering Supplies. Reynolds experienced a 61% decrease in the number of collisions, and weekly minor damage costs decreased by 50%. The company reduced its annual insurance costs by over 250,000 pounds and costs have continued to decrease. This represents a better than 4-to-1 yield on the company's investment in the SmartDrive Safety System. Although the company's main interest was reducing risky driving incidents and improving overall driver performance, Reynolds realized an unexpected benefit from the SmartDrive system improvement in claims resolution. With video documentation of collisions, there's very little to dispute, which speeds up the claims process and reduces fraud. "While our previous safety efforts were effective, it was clear we needed a more advanced solution to rise to the next level. SmartDrive's driver-centric approach gave us the tools we needed to quickly identify driving risks and work closely with our drivers to improve performance." - Rick Streiff, Fleet Manager, Access Services. Access Services of Los Angeles, Calif., reduced vehicle claims in its paratransit operations by 50.2%.