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Are We There Yet?

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The marketplace abounds with GPS-based remote vehicle tracking and monitoring systems. Do the benefits to your fleet operation of such a system justify the cost?

General Motors recently has been advertising the fact that its OnStar(in-vehicle "safety and security system" is now available in more than 50 GM models. OnStar(, introduced in 1996, was one of the first products of which most consumers became aware that utilizes satellite-based global positioning system (GPS) navigation and wireless communication technologies in personal vehicles. The fact of the matter is that automated vehicle locating (AVL) and monitoring systems have been used in various types of fleets for almost 20 years. Just as cell phone and associated calling plan and other choices have grown to the point of bewilderment with the expansion of wireless communication networks, however, so too has the array of tools available to fleet managers for remotely tracking and monitoring vehicles.

A complete review of the technologies employed by, and functional features of, such systems is well beyond the scope of this column. However, the more prominent features (not all systems offer all of these capabilities) include the ability to track the movement, routing, and locations of vehicles, either in real time (using an "active" system) or after the fact (using a "passive" one); the ability to monitor the operation of vehicles, including vehicle starts, stops, speed, idling, braking, accelerating, and turning movements; and the ability to produce reports that assist fleet managers in making sense of such data. Many systems can integrate directly with the on-board computer that runs the vehicle to monitor engine speed and temperature and oil pressure, and perform real-time diagnostics. Some systems even have the ability to determine whether a cargo container being hauled by a tractor-trailer or sitting on a flatbed railcar is full or partially full of cargo or empty.

As with many other forms of technology available to fleet managers today, understanding how such solutions might improve the management, operation, and use of a fleet of vehicles is more important than understanding all the bells and whistles that this group of products offers. To this end, let's review some of the potential benefits of these systems.

Employee Productivity

The marketing materials of vehicle tracking system makers are replete with customer testimonials, many of which focus on the salutary effect of these systems on employee productivity. Assertions that the system paid for itself in the first few months of use are not uncommon. One way in which a tracking system can enhance productivity is by facilitating the dispatching of employees to new service calls once they already are in the field, and by giving them driving directions to the next job site. Of course, these also can be done with two-way radios or cell phones and a good road atlas.

The principal way in which such systems enhance productivity, however, is that employees who know that their movements are being "tracked" tend to be more diligent in doing their jobs than they might otherwise be. They are less likely to stop for unauthorized coffee breaks, wander outside of their service territory to run personal errands, or run up overtime costs because they were "stuck in traffic" returning to the home base at the end of the day. It is important to remember, however, that the magnitude of this particular benefit of a vehicle tracking system is highly correlated to the manner in which employees use vehicles in different types of businesses or even in different lines of business within the same company.

Take, for example, a typical residential plumbing contractor whose technicians do everything from install a new water supply line to a house to replace a thermocouple on a gas furnace with a balky pilot light. The first of these activities typically requires a crew of at least three technicians, a backhoe/loader, and a minimum of 6 to 8 hours per job; the second is a 15 to 20-minute service. A vehicle tracking system is much less likely to improve the productivity of employees who usually work at a single job site for several hours or even several days, than that of employees who are continually on the move, driving from one service call to another in fairly rapid succession. Thus, fleet owners should carefully consider the correlation between vehicle movements and employee job duties in deciding whether remotely monitoring the former will have a positive impact on the performance of the latter.

Customer Service

A corollary of better employee productivity is improvements in customer service. Examples cited include more accurate billing for services based on the knowledge of when a work crew actually arrived at and departed a job site (assuming that the customer is being charged on a time and materials basis), and the aforementioned ability to dispatch technicians in response to newly received customer service requests. While such benefits are nice to have, they rarely constitute the principal reason for investing in a vehicle tracking system.

Employee and Public Safety

Perhaps the greatest benefit of vehicle tracking systems is their ability to collect detailed information on drivers' behind-the-wheel behavior, which can provide valuable insights into the safety with which a fleet is operated. Speeding, erratic steering, sudden braking, and "jack-rabbit" starts are behaviors that can be monitored, documented, and used as the basis for counseling, retraining, disciplining, and dismissing employees. Some systems even give a dispatcher the ability to remotely disable a vehicle if it is being operated in a particularly erratic manner - or if it has been stolen. These capabilities are particularly valuable for businesses that transport hazardous materials and operate heavy trucks such as dump trucks and mobile concrete mixers, the potential damage (and thus liability exposure) from which is substantial when driver error results in an accident.

Another facet of safety that a vehicle tracking system can promote is monitoring the whereabouts of employees that work in unsafe neighborhoods. In the public sector, for example, some child protective services agencies have begun using such systems to keep tabs on their employees so that they can intervene if an employee encounters difficulty during a visit to a private home or while transporting a client.

Vehicle Utilization

A final significant benefit of vehicle tracking systems is their ability to accurately measure vehicle utilization and, as a result, uncover opportunities to reduce fleet size. In terms of return on investment, this benefit may outweigh all others - at least in the short term. The typical passenger vehicle depreciates at a rate of about $5 per day or $150 per month, which is far more than the cost per vehicle of implementing and using a tracking system. The depreciation rate for a $150,000 truck is obviously much higher than this. Thus, using a vehicle tracking system to identify unneeded assets in your fleet has the potential to generate substantial cost savings. The question is, What happens once you've gone through the process of "right sizing" your fleet? Does it make sense to continue to measure vehicle utilization using a relatively sophisticated and costly data gathering system? The answer to this question will depend on a variety of factors, such as employee turnover rates, expansion of the business into new geographic areas, and the cost of the vehicles and installed equipment themselves. At the end of the day, each fleet owner has to crunch the numbers for his or her fleet operation to determine whether or not the "juice" of better management information which is the ultimate goal of all such systems is worth "the squeeze."

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