

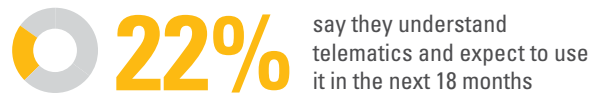


GET MORE MILEAGE
FROM YOUR **TELEMATICS DATA**

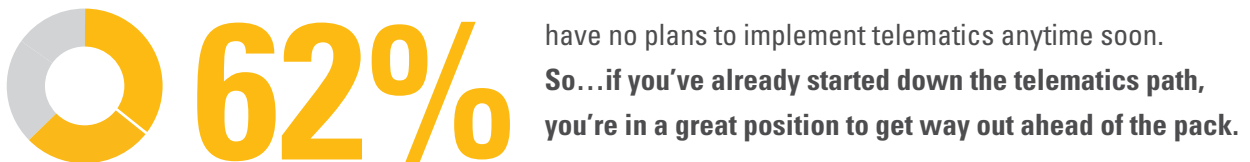


GOOD NEWS FOR TELEMATICS USERS

If you're using telematics to increase fuel efficiency, boost productivity or tighten up your equipment management processes, you're already a step ahead of many of your competitors. And based on a 2014 survey of U.S. construction firms conducted by the Association of Equipment Managers, you'll have plenty of time to extend your advantage. That's because survey respondents said:



SO WHAT DOES THIS MEAN TO YOU?



<http://www.equipmentworld.com/aem-survey-construction-firms-plan-to-grow-staff-and-fleet-size-but-most-have-no-plans-to-use-telematics>

THE POWER OF FUEL DATA

Fuel consumption data is some of the most valuable information you can collect and use. If consumption goes up suddenly—and the operator's task hasn't changed—it's a signal that something needs attention. Here are just some of the problems that can be discovered by analyzing fuel data:

- Dirty fuel injectors
- Plugged air filters
- Contaminated fuel filters
- Defective oxygen sensor
- Defective coolant sensor
- Engine thermostat problems
- Faulty Engine Control Module
- Worn piston rings or leaky valves
- Slipping clutch or transmission
- Improper lube oil viscosity
- Undersized machine, bucket or work tool
- Low tire pressure or worn tires
- Dull Ground Engaging Tools
- Fuel storage problems
- Excessive idle time
- Inefficient site layout
- Aggressive or untrained operator

Given all the issues that could cause fuel consumption to rise, it's easy to see why many owners choose to work with professionals who can help analyze and interpret their telematics data.

<http://extension.psu.edu/natural-resources/energy/energy-use/resources/farm-program/educational-materials/peak-performance>

LET YOUR DATA TAKE YOU FARTHER

Many telematics users limit data collection to a few key items: fuel consumption, hours, location and working vs. idle time are the primary ones. As companies get more comfortable with technology, some acquire more detailed data, often through fault code alerts, which are emails or text messages delivered when a machine is working outside a predetermined specification range. Typical fault code alerts would notify an owner about engine over-speeding, high-speed directional shifts, temperature changes and variances in pressure.

Whether you capture a little information or a lot, your data can be extremely powerful when it's applied effectively. Here are some of the ways telematics users are getting high mileage from critical data.

Reduce fuel costs. A mid-size construction company in Germany uses telematics to manage and monitor multiple fleets working in several locations. Data captured from machine systems has been used to cut idle time, improve maintenance scheduling and reduce operating costs, specifically in the area of fuel consumption. The CEO says the percentage of cost savings is "almost in double-digits."

Optimize preventive maintenance scheduling. Excessive idling not only increases fuel costs, it also has an impact on the cost and timing of maintenance. Companies that log too many idle hours often perform maintenance before it's necessary, driving up costs over the life of an asset. Telematics data can be used to develop fact-based anti-idling campaigns and condition-based PM practices, both of which can significantly reduce maintenance costs and downtime.

Improve bidding accuracy and competitiveness. A U.S. construction company is submitting tighter, more competitive bids, thanks in large part to the fuel data being captured from on-board systems. A project manager says it was routine practice to pad the fuel numbers in the past—just in case. But now he says, "We can go in and look and know exactly how many gallons per hour (the equipment) burns. It helps us get our bids closer and be more competitive."

Increase availability and reduce unit costs. A North American quarry using telematics on off-highway trucks says availability is up 2% and unit costs are down 2% since the technology was deployed. Higher availability means more tons from the fleet, and since every ton is being produced at a lower cost, profits are rising.

Identify and resolve potential safety issues. Reports from one construction firm's telematics system revealed a steep spot in a haul road where some truck operators weren't using their retarders effectively. A focused training initiative was launched, reducing the risk of accidents and injuries and saving the company about \$12,000.

Protect component life. Using abuse event data, a contractor was able to precisely identify problems with operator technique, then structure training to address those issues. As a result, operator abuse events have been reduced by 75%.

Cut service time and costs. A fleet manager for a Florida county says telematics data is very valuable to his in-house service organization. "If there's an intermittent problem, we can go back through the

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historical record to help diagnose the problem more quickly." And if an equipment dealer needs to get involved, "They can go in and look at (the data) and already know what's wrong, having the same information we do. That can save technician hours as well as downtime." If a dealer has to dispatch a field technician, sending the GPS coordinates from the mapping system saves time and money.

Prevent theft or recover stolen assets faster. With \$400 million in equipment theft reported in the United States in 2010 alone, it's clear loss prevention is becoming a growing priority. Telematics can help with geo-fencing capabilities that alert owners when equipment is moved outside pre-determined boundaries. Some systems employ an emergency mode, sending more frequent alerts if power is cut or a machine moves without being turned on. These features help contractors and others recover stolen assets faster, reducing insurance costs and minimizing downtime.

Optimize asset utilization. With accurate data about the amount of work machines are doing, it's easier to identify underutilized assets. When possible, this equipment can be put to work on other projects, reducing the need for rental machines. Precise data about machine utilization can be used to determine the best mix of rental and owned assets, forecast future equipment needs, plan capital expenditures and assess the viability of selling underused assets.

Improve regulatory compliance. In a state like California, which has 35 separate air quality districts, meeting emissions regulations can be especially hard when equipment gets moved from site to site. Some fleet managers overcome the challenge with telematics, using geo-fencing capabilities to make sure machines don't get moved into areas in which they are not compliant. Machine data can also be used to verify that emissions components are in good working order. If early-morning or late-evening noise regulations are a concern, setting a system to deliver alerts if machines run outside a specified time period will help ensure compliance. Historical data can also be used to respond to noise complaints if a firm needs proof that equipment was not operating during mandatory quiet times.

Maximize resale value. Consider two 10,000-hour machines, one with an idle rate of 35%, the other 15%. If they're both priced comparably in the secondary market—as 10,000-hour units—the owner of the first machine essentially sells an asset with 6,500 working hours for the same price as the asset with 8,500 hours. Using telematics data to track and reduce idle time would have put both owners, especially the first one, in a better position to recover higher resale value.

DATA CHALLENGES

Despite all benefits associated with capturing and using data, the process can be difficult. Some of the major challenges include:

- **DATA OVERLOAD**

Fault code data can be especially overwhelming. One fleet manager from Colorado speaks for many when he says, “I don’t have time to monitor sensor alerts, nor do my people. It’s just noise.”

- **MIXED-FLEET IMPLEMENTATION**

When a fleet includes different brands of equipment with OEM telematics systems, plus legacy units with third-party telematics, it can be difficult and time consuming to import data from each supplier’s website. The Association of Equipment Management Professionals has enlisted the help of key suppliers to develop a standard way of presenting telematics data, so owners can use a single software interface to access multiple suppliers’ sites.

- **ON-HIGHWAY ASSETS**

Finding a system that can accommodate on-highway as well as off-highway assets—and make standardized information easily available from one site—can be challenging.

- **DATA ANALYSIS AND INTERPRETATION**

Without advanced analytics, powerful visualization tools, and extensive product and application expertise, the volumes of data you collect may not be very meaningful. That’s why it’s important to work with a supplier that has the tools, resources and experience to transform data into actionable information.



As you use data to improve operations, keep in mind that even a small gain can pay big returns. Check out the chart below to see how a one percentage point improvement in a factor like productivity can affect the bottom line.

1% CHANGE	IMPACT ON PROFIT
PRODUCTIVITY	2.5 - 4.5%
AVAILABILITY	1.75 - 3.5%
OPERATING COSTS	1.5 - 3.5%
UTILIZATION	1.5 - 2.75%
PURCHASE PRICE	0.5 - 0.85%

“SIPPING FROM A FIRE HOSE”

Equipment World Executive Editor Tom Jackson says getting information from a telematics data stream can be like trying to sip water from a fire hose. His advice for companies that fear drowning in data?

- **VET YOUR VENDORS**

Any companies vying for your business must be able to help you understand what the information will do. “If they can’t explain it in terms you understand, you probably don’t want to partner with them.”

- **FOCUS ON THE “WHY”**

Never lose sight of your fundamental goals: “Save money, work more productively and manage your people and hard assets better.”

- **DELEGATE THE “HOW”**

Someone in the organization needs to understand how the system works. Considering assigning that task to bidding and estimating people because “they’re used to using software in their jobs” and “the biggest payback you get from telematics is when you can integrate the data with the back office system.”

- **SET GOALS AND MEASURE PROGRESS**

As with any other change, it’s critical to “give (the team) goals and guidance and monitor results.”

- **NETWORK**

“You can’t learn this stuff in isolation,” so make an effort to attend conferences, seminars and other networking events.

SAVE MORE FUEL AND MONEY WITH TELEMATICS DATA

Work with a pro that can help you use your data wisely and extend your lead over the competition.

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