The Value of Remote Monitoring for Equipment Maintenance
Telematics helps contractors streamline care and service of equipment, while saving time and money in the process for a healthier bottom line.

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While contractors choose to use telematics for different reasons, many appreciate the value it delivers in the form of remote monitoring for equipment maintenance - and with good reason: It streamlines the care and service of equipment, while saving time and money in the process. Here's a refresher on telematics and how it can take maintenance programs to the next level.

Informed decision-making pays dividends
Telematics is a web-based technology that uses a Global Positioning System (GPS) receiver and an onboard communication device on each machine. The GPS receiver identifies the machine location, while the modem collects information sent to it by sensors on the machine. The data is then transmitted through the modem to designated users via a Web portal.

Many telematics packages are purchased with a subscription on a per-unit-basis. Some manufacturers offer telematics as a standard service at the time of purchase on select models. CASE, for example, provides telematics as standard equipment during the first three years of service under its ProCare program for heavy equipment, and as standard equipment on the backhoe loaders.

With telematics, users can track real-time data of machines located virtually anywhere in the field and use the information to improve their business in numerous ways. The technology can be used to ensure efficient equipment utilization, enhance equipment security, improve job planning and estimating, and reduce machine idling. When it comes to maintenance, it offers the ability to create a clear and concise program for organizing equipment maintenance data and using it to make informed decisions that pay immediate and long-term dividends.

Automation equals efficiency
Telematics introduces automation to the realm of equipment maintenance. Automation, in turn, results in streamlined maintenance and recordkeeping activities. With telematics, information gathering and decision-making becomes easier and faster.

Users can use the technology to schedule automated maintenance alerts, which significantly reduces the time involved in the data collection process and the paperwork that triggers preventive or corrective maintenance. Business owners and fleet managers no longer need to make jobsite visits and phone calls to obtain basic data such as engine hours, fluid levels or operating temperatures. In addition, the information gathered is more accurate based on a steady flow of real-time data and the elimination of handwritten notes and associated paperwork.

Information that is automatically collected and organized also allows decision-makers to quickly pull reports with all the pertinent information needed to schedule maintenance at the opportune time. It essentially eliminates the potential to pull machines off of jobs for routine service before they actually need service. As an example, data could reveal that a machine needs an oil change sooner than recommended by the manufacturer based on the type of work the machine is involved in. Conversely, a machine might not need to be serviced as frequently as another machine based on the work it does and the job it's on.

An added advantage of automated alerts, which can be easily overlooked, is that it reduces the reliance on equipment operators to intervene and alert the maintenance team to items that call for attention. Although most operators realize it's a responsibility that comes with the job, it's not unheard of for an operator to overlook the need to replace a simple wear item, or forget to mention something that doesn't seem right with the machine. A system that automatically alerts decision-makers to issues like these, on the other hand, can minimize the potential for oversights that threaten to hinder machine performance and create unnecessary downtime.

With telematics, the maintenance team can gain efficiencies by minimizing busywork and focusing their time and efforts where needed most. The elimination of oversights related to maintenance saves additional time and costs.

Better tracking for improved uptime

While maintenance efficiencies equate to costs savings, another major benefit of telematics is the ability to better track the health of equipment and detect problems before they blossom into unnecessary expenditures and downtime.

A telematics program can deliver accurate information on temperatures, pressures, and CAN-bus data. The outputs monitored and recorded by telematics can be as comprehensive or simple as needed. Some telematics solutions come pre-programmed to monitor machine health parameters, many of which can be customized to monitor machine health.

In addition to obvious health parameters, users can hone in on specific areas that need attention. For instance, the owner of a machine on a demanding project in a hot climate might set up the program to keep tabs on the machine's operating temperatures. If the temperatures climb outside acceptable limits, the program can alert the maintenance team, or the dealer who services the equipment.

Most telematics systems can also be readily connected to auxiliary devices to monitor any number of systems on the machine. As an example, an auxiliary device could be readily connected to an open port on the telematics system's modem to monitor the level of grease in a hammer attachment. After gathering data from the auxiliary device, the telematics system can issue an alert to replace the grease long

before it runs out. Reminders and alerts can be sent via text, email or both to as many individuals as necessary including the equipment dealer.

Another key advantage of telematics is the ability to mine a rich history of information to improve maintenance practices. Some systems can gather information from as far back as 18 months, or even longer if it's regularly downloaded and stored. With historical data, users can spot trends that point to potential problems. Just one example is fuel usage. If the data reveals a spike in fuel consumption for a given machine it could be symptomatic of an issue that demands further investigation.

Having a keen understanding of operation characteristics of machines and operators over time allows telematics users to flag issues that appear out of the ordinary, and in the process, minimize potential maintenance headaches before they strike.

Improved planning and preparation for the whole machine

In addition to alerts that signify potential problems, telematics can be programed to issue reminders. The result is a more productive maintenance team when machines call for routine downtime. It also helps optimize the time machines spend working on the job.

With telematics, a reminder can be sent to the fleet manager or any maintenance team member signifying that planned maintenance is due within a certain time period. Receiving a reminder can be a significant advantage, especially when machines are kept on jobs for any length of time. The reminder gives the maintenance team the lead time they need to order parts far in advance of the jobsite visit. Lead time also means the team can diagnose problems and plan the maintenance work in advance if it involves anything beyond routine servicing. In addition, the crew can schedule maintenance when the machine is not being used to avoid taking an otherwise productive machine out of service.

The reminders and historical data delivered by telematics can also contribute to better planning associated with predictive maintenance of parts not reported on by the telematics technology. Once a reminder is received, a decision-maker can readily pull a report on the history of the machine. The report might reveal the opportunity to conduct predictive maintenance in addition to routine servicing. The issue could be as simple as a wear item, such as bucket teeth. If historical data shows the teeth are normally replaced around the same time as the next oil change, for example, it likely makes sense for the service technician to change out the bucket teeth while he's at it. The same holds true for any wear part since the goal is to minimize equipment downtime and maintain peak productivity.

The ability to plan ahead for maintenance leads to improved productivity on and off the jobsite.

Investing in the business

Like any investment, the decision whether to adopt telematics demands a hard look at the technology from every angle to ensure it benefits the business. From the perspective of equipment maintenance – and the ability to deliver tangible efficiencies and costs savings – deployment of a telematics program may prove an excellent return on investment in this area alone. In nearly all applications, customers who have decided to employ telematics within their operation have seen payback on the insight it provides.

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