GPS Comes of Age

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New, cheaper global positioning systems enable hvacr contractors to save time, money, and fuel.

By Peter Strozniak

Installing a global positioning system (GPS) in every company truck is one of the best decisions he ever made for his company, says Henry Abrams, secretary and treasurer of H.A. Sun Heating and Cooling Inc. of Bloomfield, Mich. “GPS has given us a much more cost-effective and efficient way of running our business,” Abrams says. “It paid for itself in 30 days.”

Abrams and other hvacr managers rate GPS as an indispensable tool because it allows them to see where their trucks are at anytime, anywhere. Having access to such information in near real-time can lead to substantial reductions in payroll and overtime costs, significant increases in worker productivity, huge fuel savings, efficient truck routing, better communications, theft prevention, and other benefits.

“We had guys who told us they started their shift at 8 a.m. and ended at 4 p.m. But when we put GPS in their truck, we found their real hours were seven and a half hours or seven and three-quarters hours,” Abrams says. “When you multiply those working hours by five days, and then multiply that number by 52 weeks, your payroll savings are big.”

The GPS, one of the technological marvels of our day, consists of a constellation of satellites that orbit 12,000 miles above the earth, and that transmit location coordinates to cell-phone towers on the ground. Fleet managers tap into this data via a broadband Internet connection to view on their computer screens a map showing the location of any truck in near real time. GPS updates the location of each truck every five minutes to 15 minutes. The system also can track and provide detailed reports on a truck’s direction, speed, stops, starts, idling time, and mileage. Some systems offer a breadcrumb trail feature that can show where the truck has been over any time period.

Developed by the federal government and primarily used by the U.S. military for years, commercial use of GPS began in the 1990s, though the cost of a GPS solution was too high for most small and midsize businesses that managed a fleet. Then, the price of hardware was about $2,000 per vehicle, and a system-use fee ran between $60 to $80 or more a month. Technology advances, however, have knocked the hardware price to about $500 or less per truck, and

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monthly fees to approximately $30.

Even less expensive are GPS-enabled cell phones. A Nextel GPS-enabled phone, for example, costs between $3 to $89 per phone, and then $22 to $25 per month for service.

At those prices, increasing numbers of small and midsize businesses can adopt GPS, gaining the myriad benefits of the technology.

Apollo Heating and Cooling of Cincinnati began using vehicle-mounted GPS eight years ago when most small and midsize companies knew little about the technology.

“At that time, it was pretty expensive, plus we had five guys quit over it,” recalls Jamie Gerdson, a third-generation owner of Apollo, which serves southern Ohio and northern Kentucky. “When we cleaned out their trucks, we found out they were doing side jobs.” Because GPS works 24/7, it eliminates the unauthorized use of trucks for side jobs and personal use during or after working hours.

“If your employees don’t want to be monitored, then you have to wonder if you really want those guys on your team,” Gerdson says. “If they aren’t doing anything wrong, what’s the big deal?”

GPS also can weed out dishonest customers and settle billing disputes. For example, if a customer complains that a technician was 20 minutes late but the technician insists he arrived on time, says Gerdson, a GPS stop-and-start report on that technician’s vehicle can provide the documentation you need to resolve the issue.

Other useful GPS capabilities include the near real-time location of each truck that can help managers see which technician is closest to the next job. GPS also can provide the driver with the quickest route to the next customer location. And some GPS vendors offer a geo-fencing feature. With a few clicks of your mouse, you can create a “virtual fence,” or circle around a work area to keep track of how many times your truck enters and leaves a geographic area.

“Information is the key to running a successful business,” says Malcolm Rosenfeld, owner of Chicago-based GPS Systems Inc., which serves the hvacr industry. “GPS is no longer a matter of whether you can afford it, but rather can you afford not to do it. You cannot grow your business unless you cut costs, and GPS is the way that can help you cut costs and grow revenue. If you could drive with your technicians everyday, would they do a better job? GPS puts you in the passenger seat without leaving your office.”

For instance, after installing GPS on 43 trucks, Sun Heating and Cooling saw its number of jobs increase and its gas consumption drop by 15% to 20%.

“When we installed GPS in 2005, we saw an increase in the number of jobs per day, and our gas cost went down to $1,600 from $2,000 a month through better routing and dispatching,” says Lee Weinstein, director of operations at Sun Heating and Cooling. “When you know where all of your trucks are, GPS allows you to add more jobs to the daily schedule. For instance, when we get a customer call, we look at our map to see which technician is closest to that customer, which saves a lot of time and fuel.”

Moreover, the efficient dispatching of trucks also can enhance service because dispatchers can more accurately estimate when a technician will arrive at the customer site.

Apollo also has seen these and other benefits.

“Our system will alert us when a truck is going more than 70 miles an hour for over four minutes, and when a truck is idling for more than five minutes,” Gerdson says. “When we installed GPS on our 30 trucks, we learned that most of our guys were idling them for 50 minutes or more. Our GPS has allowed us to correct these problems and cut our gas bill. I know that because of GPS we’ve also been able to improve our worker productivity by 20% to 25%.”

GPS-enabled mobile phones offered by Nextel Communications are also helping companies run more efficiently and step up productivity.

“We were looking for a way to automate our payroll because we have a very detailed cost-accounting system,” says CFO Owen Mueller of Pete Miller Inc., a Marion, Ohio-based hvacr business. “With the Nextel phones we are able to collect the data in a timely fashion and in the detail that we wanted.”

For example, when a technician arrives at the job site, he uses the mobile phone to record the time when the job is started and completed. In addition, the technician can input the codes for the type of job done, such as equipment installation, hanging duct, routine maintenance or cleaning up the job site. All of that information is transmitted via the Internet to the home-office computer where managers can review, edit, and process the job reports for payroll and billing.

“The Nextel phones have improved our payroll processing time immensely,” Mueller says. “We’re more confident now that our payroll is accurate, and our guys are doing what they are supposed to be doing. It’s also helped speed up our billing because we can send some of our large commercial customers’ bills via the Web. This allows them the option of paying online, which improves our cash flow.”

The Nextel phone is able to track an employee’s work activity through a mobile workforce management software solution provided by Xora Inc. of Mountain View, Calif. Xora also offers this feature to Sprint mobile phone network.

“By using the Xora solution on GPS-enabled phones, our clients see an average savings of $1,500 to $3,000 per employee,” says Mike Berger, Xora’s senior manager for product and channel marketing. “We’ve had customers (about 7,000) save a whole lot more by reducing payroll expenses and working more efficiently.”

Mueller is looking for more efficiency in 2007 when he expects to use the Xora solution to fully automate his company’s payroll process. Currently, the job reports filed by technicians are reviewed and edited at the home office. Subsequently, that information is loaded into the company’s accounting system.

“In the first quarter of next year, we expect to fully integrate Xora’s timekeeping information with our accounting software system that will fully automate the process and save us 40 hours a week,” Mueller says.

The Nextel phone also has the capability to track the location, speed, and idling time, as well as stops and starts of the truck. However, because the phone needs to be recharged every night, it cannot monitor any after- hours unauthorized use of the truck. Also, if the truck is stolen, the GPS-enabled phone does not provide a way to recover it, so you’d need to install a separate tracking device on the truck if you want that capability.

This article is the third in a three-part series on fleet management. The first article, on buying versus leasing, and the second, on money-saving strategies, are available at Buy or Lease? and Focus on Fleet Maintenance.

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GPS Buying Basics

Evaluate how eight key capabilities will improve your efficiency and productivity.

Hundreds of companies sell GPS solutions, each offering a bewildering array of capabilities at a variety of price points, so plan to conduct some research before you buy.

“There are a lot of smoke and mirrors in the GPS industry, and when most people hear of GPS, they think it’s all the same no matter who they buy it from,” says Dennis L. Abrahams, President and CEO of SageQuest, a Beachwood, Ohio-based GPS vendor. “But that’s just not the case. There are a lot of hidden costs that you have to watch out for. Some vendors will charge you extra for installation; others will charge you fees for additional data features and other options. We see all kinds of stuff.”

What really drives the value of the GPS product, Abrahams says, is finding the right system that is

practical for your company and easy to use. That means doing a bit of soul-searching to determine what your company needs from a GPS solution. Ask yourself: Where do you want to track and reduce costs? Where do you think you could achieve efficiencies?

Armed with this information you can begin to review vendors. Identify five or six companies that are successfully serving hvacr businesses. You can find many with a quick search on the Web, where some GPS vendors post case studies and testimonials. Contact the hvacr owners quoted in the testimonials and ask about their experiences with GPS.

SageQuest, which has about 100 hvacr companies among its 400 clients in 35 states, offers a free apples-to-apples comparison chart that you can download and print for free. The chart lists eight essential capabilities that you should look for in a GPS solution and allows you to rate, compare, and score each GPS solution side-by-side. To review the chart, go to sage-quest.com, and click "download info," on the left side of the page.

The eight capabilities and what you should look for include:

1 Plot frequency: Note how often the GPS can track or update a vehicle's location. Many hvacr operators opt for a frequency of every five minutes to every 15 minutes. But a GPS solution also should be capable of plotting trucks every minute or every two minutes.

2. Information storage: Indicate how long the GPS vendor will retain information for you. The standard is 14 days to 30 days. However, some GPS vendors offer information storage for up to 90 days, which can be useful to spot patterns of how your trucks are being used.

3. Product features: Look for information on offerings such as geofencing, maintenance scheduling, breadcrumbing of routes, and real-time alerts.

4. Mapping: Find out how often the vendor updates the maps in its system. Most hvacr vendors expect maps to be updated at least every six months, so they include new developments and streets.

5. Report detail: Check to see if the vendor offers reports with the level of detail that you will need.

6. Report flexibility: Find out if you will be able to customize the report or if you must use a standard report.

7. Report ease-of-use: Evaluate whether the reporting function is easy to use.

8. Overall value: Decide which vendor meets your needs.

The checklist is designed to evaluate how well each feature, and ultimately each system, matches your needs, rather than comparing the systems with each other.

More Online Resources

Other GPS vendors that serve the hvacr industry and provide a wealth of information on their Web sites include:

gpstechnologies.net
discretewireless.com
gpsfleetsolutions.com
www2.navtrak.net
atroad.com
xora.com
Nextel.com

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