

With the installation of M2M (machine-to-machine) technology that enables the company to remotely monitor and control its billboards, Lamar Advertising is saving more than 25% in energy costs.

# Remote Monitoring: Lamar's Energy Savings Strategy

by Sarah Howland

“Going green” is one of the most-used catch phrases of the past decade — some might even say the phrase has become played out. It seems every company today has some type of “green” initiative or “green” product. Many companies appear to be using the concept of green solely for PR purposes. But, when taken seriously, green initiatives can have a staggering impact on a company’s bottom line. Lamar Advertising is one company that can attest to the measurable business benefits that “going green” can provide. Lamar recently adopted an M2M solution that enables the company to remotely monitor and control its billboards — and is saving more than 25% in energy costs on these billboards as a result.

Lamar is a billion-dollar company that employs approximately 3,000 people at its 150 offices throughout the country. With more than 150,000 billboards, Lamar is the largest outdoor advertising company in the United States. Not only does lighting these billboards take a lot of energy, but controlling the lighting of 150,000 individual billboards to ensure advertise-

ments are lit properly is a challenging task. Any billboard that is leased by a customer must be lit at night, and a billboard that is not lit when it should be because the timer wasn’t set correctly or a light was burnt out results in decreased customer satisfaction. “We want to avoid bulb outages at all costs,” says Greg Gauthier, senior project manager of Lamar’s national operations group. “Outages can lead to giving customers refunds for downtime, and we also want to provide the most professional presentation we can.”

Historically, Lamar used either photocell or mechanical timers to control the lights on each billboard. These timers

had to be set and changed manually, which was a daunting task for Lamar’s 900 field technicians. When a billboard was leased, a field technician would need to go to the billboard to set the timer so the lights would come on at dusk. When that billboard’s lease was up, the field technician had to go back to the billboard and turn the breaker off so that energy wouldn’t be wasted while the space wasn’t

## Installation Profile

**Technology User:** Billion-dollar Lamar Advertising is the largest outdoor advertising company in the United States, with more than 150,000 billboards. The company employs approximately 3,000 people at its 150 offices.

**Problem:** To ensure each of its 150,000 billboards was lit properly at night to satisfy customer expectations, Lamar’s field technicians had to drive around after normal work hours to check bulbs. Because this task couldn’t be completed during the workday, it cost Lamar in overtime pay and fuel costs of additional trips. Burnt out bulbs resulted in refunds to customers for downtime.

**Solution:** Lamar implemented remote monitoring solutions on about 2,000 of its billboards that enable the company to remotely monitor and control the lighting on those billboards. The solutions eliminate the need for after-hours light checks, because Lamar is alerted if a bulb is about to burn out. Therefore, overtime and fuel costs, as well as customer refunds associated with those billboards, have been eliminated.



Greg Gauthier, senior project manager at Lamar, helped the company implement a remote monitoring solution that has saved more than 25% in energy costs.



**“We were locked into a manual system. We knew there was a better, more efficient way of doing things using technology — we just hadn’t found it yet.”**

**Greg Gauthier, Lamar Advertising**

being used. Further, each timer had to be manually adjusted during daylight savings time to accommodate the time change.

In addition to the manual setting and adjusting of timers, the field technicians were also responsible for regularly monitoring the billboard lights to make sure no bulbs were burnt out, thereby ensuring uptime for advertisers. Since the lights come on at dusk, this meant field technicians had to drive around at night to check the lights on each billboard. “This process was inconvenient for the field technicians and inefficient for Lamar,” says Gauthier. “Since the job couldn’t be done during normal work hours, we had to pay each technician overtime and incur fuel costs from all the night runs.” Not to mention, the field technicians made these rounds on a weekly versus daily basis, so it wasn’t always possible to catch a burnt-out bulb as soon as it hap-

pened. Because of this, the likelihood of Lamar having to give credits to customers because of billboard downtime was increased.

### **ELIMINATE MANUAL PROCESSES WITH M2M**

“We were locked into a manual system,” explains Gauthier. “We knew there was a better, more efficient way of doing things using technology — we just hadn’t found it yet.” In 2008, this “better” way became clear when Bob Switzer, VP of operations at Lamar, was approached by the owner of Outdoor Link. Outdoor Link had created an M2M solution that would eliminate many of the manual processes Lamar had in place. The solution consists of a weatherproof box containing a wireless control module that collects data from a billboard and transmits it to a central server, which then pushes commands from

the central server back to the control module. With this solution, Lamar would be able to monitor and control the lighting of the billboards remotely rather than having to have field technicians manually adjust timers and check bulbs. Switzer felt the solution would be beneficial for Lamar, and installation of approximately 1,000 units began in 2008. At this time, Lamar sought an additional vendor of the M2M solution. “We feel it’s important to have at least two vendors for everything,” says Gauthier. “Things happen that are above and beyond the control of a company, and we feel it’s important to have redundancy in every area of our supply chain.” Thus, in early 2009, Lamar began rollout of about 900 units of the True Tracker remote monitoring device from API Monitoring, which works similarly to Outdoor Link’s solution (see vendor sidebar for more on the network that powers True Tracker).

According to Gauthier, installation of the units is fairly straightforward. “The unit is placed between the electrical disconnect and the lighting fixtures on the billboard,” he says. “Installation requires the services of a licensed electrician, which we typically have on staff at each plant. If we didn’t have an electrician available, we either hired one or contracted with the device vendors.” The cost

## Reliable Network Coverage Necessary For M2M Success

The True Tracker solution from API Monitoring automates manual processes and has saved Lamar Advertising a substantial chunk of change. With the ability to transmit data back and forth between the device installed on the billboard and the centralized Web-based software that Lamar offices interact with, Lamar is able to remotely monitor and control its billboards rather than send field technicians on-site. But for the solution to be successful, data must be able to be transferred at all times — meaning API must have very reliable network coverage. For this, API has turned to Numerex, which has provided reliable M2M (machine-to-machine) network services for the past 15 years.

Obtaining network coverage for an M2M solution is not as simple as obtaining coverage for your cell plan. With devices implemented all over the United States that are transmitting data constantly, API depends on Numerex to ensure coverage is available and working at all times. “Our core network offering is compelling because we offer many choices, including CDMA [code division multiple access], GSM [global system for mobile communications], and satellite coverage,” says Mike Lang, executive VP of sales at Numerex. “We know how to maximize these three types of

coverage for companies based on their individual needs.” For example, the True Tracker solution is one that requires a small amount of data transfer, but a wide geographical footprint. Rather than relying on multiple network providers for each type of coverage needed for the solution, Numerex aggregates coverage from a number of carriers to provide service to API and offer them one point of contact. If API experiences an issue, they reach out directly to Numerex, which has 365/24 support available.

Further, Lang notes that Numerex’ ISO 27001 certification is a differentiator that API took notice of when choosing a network service provider. “We are the first ISO-certified company in the M2M space,” notes Lang. “That certification and the multiple layers of redundancy we have within our infrastructure provide our customers with a level of comfort.” In addition to its network services, Numerex also provides its own M2M devices and an open-source platform for companies looking to design their own M2M applications.



**Network coverage from Numerex powers the True Tracker remote monitoring solution.**

**For More Info. On Numerex**

**Go To [www.numerex.com](http://www.numerex.com)**

to install each unit, including hardware, was less than \$600.

The units collect information from the billboard, including whether the lights are on or off, and sense the electrical load of the lighting to determine if there are any outages. That information is then sent to a central server, which distributes the information to a Web-based platform that can be accessed by each Lamar office. The company's charting managers, who are responsible for managing which structures are or aren't leased in a certain locale, interact with the platform most frequently. General managers and sales managers also have access to the information provided by the solution. Everyone who regularly accesses the Web-based software was required to complete a tutorial to learn how to use the system effectively.

In addition to being able to view data from each individual billboard, each office is able to send commands for a specific billboard or set of billboards to that centralized server that are then wirelessly communicated to the units. For instance, if Lamar has a customer that leases 50 billboards, the office that manages those 50 billboards can send a command remotely using the Web-based software to set the lights on a schedule corresponding with the length of the customer's lease. The billboards can be aggregated and programmed by client, rather than having to be programmed individually.

Lamar has proprietary software that each charting manager uses to keep track of which billboards are leased and to what advertiser, what the timers on those billboards are set to, and which billboards are available for lease. API Monitoring was able to create an interface between Lamar's charting software and the True Tracker Web-based software so that the information is shared in real time between the two software systems. As an account executive leases a billboard, the charting manager enters which billboard has been leased, the times the lights should turn on and off, and the length of the lease. This information is shared automatically with the True Tracker software, so the lights will come on at the specified time, turn off at the specified time, and be shut off completely when the billboard is no longer leased.

All these things are accomplished without a field technician having to go on-site even once.

With the M2M solution currently installed on more than 2,000 of its billboards, Lamar has already experienced some beneficial results. First, field technicians no longer have to manually set or update timers at each billboard or drive around at night to check the billboard lights. This enables these technicians to focus on their core job function, which is to manage the content on the billboards and perform preventative maintenance tasks on the structures. By eliminating the need to have technicians check billboard lighting, Lamar has in turn eliminated the related overtime and fuel expenses. Second, the charting managers are able to remotely control the billboards so they are never lit when not leased. The ability to do this ensures Lamar doesn't waste electricity on billboards that don't hold advertisements.

### **M2M ENABLES PREVENTATIVE MAINTENANCE**

Another benefit of the new M2M solution is that the billboards can be remotely monitored not only for current usage, but also for preventative maintenance of the lighting fixtures. Charting managers are able to view each billboard and monitor its configuration, and the M2M solution gauges the flow of electricity that is going to each billboard. This means that not only will Lamar know immediately if a light burns out, it is often possible (based on a change or spike in electric current) to anticipate that a light is about to go out before it actually happens. When the system notices a spike, an automated alert is sent to the charting manager, who ensures a technician is sent to the billboard immediately to make the repair. Because of this capability, refunds to customers because of billboard lighting downtime are a thing of the past on structures equipped with the solution. "Credits given because of improper illumination [on structures where the M2M solution is installed] have been eliminated, and customer satisfaction maximized," says Gauthier. "The solution has eradicated the possibility of a light being out for days before being discovered by a technician or customer.

Now we know immediately when, or even before, a light goes out."

Lamar has also been able to use data from the True Tracker software to create reports that measure what is spent on a certain billboard or group of billboards to help determine profitability. These reports illustrate how significant Lamar's cost savings have been since rollout of the M2M solution began. From June 2008 to August 2009, Lamar's average energy savings on billboards with the remote monitoring solution in place was more than 25%. "With the M2M solution in place, we've become more energy-efficient, more time-efficient, and more cost-efficient," says Gauthier. "The solution shows the great results that can be realized when technology is applied to manual processes." Lamar will continue rollout of the M2M solution to the remainder of its 150,000 billboards as soon as it is practical given the current economic climate. But, the company's trend toward sustainable business practices doesn't stop with its remote monitoring solution. Lamar is switching all of its posters from paper to 100% recyclable polyethylene. The company has also changed the printing technology at its Lamar Graphics subsidiary from solvent-based inks to UV-curable inks and is embarking on a solar and wind power initiative this year.

Lamar is a prime example of a company that's putting the term "going green" to good use. And while more than 25% in energy savings is impressive, the number aligns with the results experienced by many companies deploying M2M solutions. According to a recent study by Aberdeen Group, organizations using remote service solutions experience, on average, a 22% increase in first-time fix rate, a 28% reduction in MTTR (mean time to repair), a 7% increase in service revenue, and approximately \$500,000 in service-related cost savings. □



*Sarah Howland is an editor at Integrated Solutions. She can be reached at: [sarah.howland@isminfo.com](mailto:sarah.howland@isminfo.com).*