

THE TWO SIDES OF GREEN M2M

Whether you see saving energy as a way to trim the budget or a way to help the planet, M2M is behind the technology that makes both of these solutions possible.



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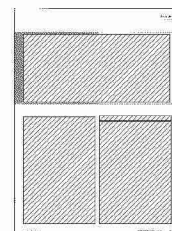
David Cutter was surprised when he started saving money. He had installed an energy monitoring and management system in his Burger King franchise with the hope of conserving money and power, but didn't have complete faith the savings would be significant.

"I was frankly a bit of a doubting Thomas thinking that it was just too simple," says Cutter. "But it's very simple and that's the beauty of it. And as I look at my bills this year as compared to the previous year, we're saving therms and kilowatts in fairly significant amounts, so it's definitely going to work."

Energy-management systems represent a way for organizations to save money while at the same time helping their enterprises go green in the process. While green seems to be the buzzword of the new millennium, it is much more than market hype, proving to be a legitimate path to cost savings for many companies. In the end, what is good for the earth is usually good for the pocketbook—and that's enough of an incentive to get any company to hop on board the green bandwagon.

Many M2M (machine-to-machine) solutions fall naturally into the green technology category. They're designed to increase efficiency, conserve resources, and allow enterprises to operate "smarter." Often, these systems try to reduce the resources used at the production stage of the organization, with savings in gas, electricity, water, and more. From energy management and monitoring to water conservation, M2M solutions are leading the way in the march to a more eco-friendly future.

ONE BURGER, HOLD THE THERMS



Cutter has found that greater enterprise efficiency and green practices go hand-in-hand. He is a partner in RIO Management, Hillsboro, Ore., which owns several Burger King franchises around Portland.

RIO was approached by Advanced Telemetry, www.advancedtelemetry.com, Larkspur, Calif., about implementing the EcoView energy-management system. EcoView is designed to help users reduce energy consumption through monitoring and control. Last fall, RIO agreed to install the system to measure electricity and gas usage at two locations.

Since the system was turned on in September 2008, RIO has seen a 13% savings in therms for gas use in one restaurant, and a 25% savings in therms at the other location. Cutter says the building with the higher savings is significantly older than the other, and less energy efficient, so the system has made a bigger difference. He says the results have been so good RIO plans to install EcoView in all of its Burger King restaurants.

EcoView includes a graphical display in each location; in this case it is placed in the restaurant manager's office. The display shows a representation of current energy use. The system also offers users the ability to control thermostats, and thus energy use, from a remote location. Users can configure automated warnings, alerts, and messages based on preset parameters. Overall, EcoView allows each restaurant to create the same amount of product using reduced amounts of valuable resources, such as gas and electricity.

One aspect that appealed to Cutter is the ability for users to play as much, or as little, of a role as they wish in the day-to-day management of energy use. Currently, RIO has outsourced all thermostat management to Advanced Telemetry, which takes care of monitoring energy use and making the necessary adjustments. Cutter says the hands-off nature of the system is part of its appeal. "We put it in and let (Advanced Telemetry) set the parameters, and it saves some money," says Cutter.

He goes on to say the solution "certainly made sense in the green world we're all trying to get to." The Energy Trust of Oregon, www.energytrust.org, Portland, Ore., agreed with Cutter's assessment and is creating an incentive for RIO. The organization provides rebates to companies seeking to install energy-efficient upgrades for their facilities.

"When we told them (Energy Trust of Oregon) what we were doing, they were very interested," Cutter says. Currently, Advanced Telemetry and the Energy Trust are working together to determine the exact rebates RIO will receive. While EcoView was helping RIO save money before, the new incentives will make it even more cost effective to

install the system in the rest of the franchises. By helping to conserve more energy, RIO will save still more money.

KNOWLEDGE IS POWER (SAVINGS)

EcoView from Advanced Telemetry is one of a number of energy-management systems on the market. In addition to instant thermostat control to promote savings, large organizations are monitoring their energy use to change the way they manufacture products. GM Daewoo, www.gmdaewoo.co.kr, Incheon, South Korea, is using a system from Tridium, www.tridium.com, Richmond, Va., to identify how much energy is used during the manufacturing process for each vehicle it builds.

Previously, GM Daewoo used spreadsheets to record energy information, but the process was cumbersome and time consuming. The company is now using Tridium's Niagara Framework as part of a system to collect data from the factory automatically.

Mike Marston, president, Tridium Asia-Pacific, explains how the system works, saying, "They (GM Daewoo) have a number of Modbus meters that measure electricity, gas, water, compressed air, and steam." Information is then transmitted over a Modbus connection into a Tridium JACE-2 (Java Application Control Engine), where it can then be modified for inclusion in management reports running in Tridium's Vykron Energy Suite.

Marston continues, "The Vykron energy package does two things. One, it's a realtime application that can be viewed from different Web browsers throughout all the facilities, throughout all the 12 factories ... That's the application side." This lets factory operators view data in realtime.

Marston continues, "At the same time, we transfer that data into a large enterprise SQL (structured query language) database, and (GM Daewoo's) enterprise reports management systems can then process that data into their own kind of reports." In essence, Marston says data is displayed so users can see what's happening at multiple locations, and at the same time data is also fed into the enterprise database.

Data is stored every fifteen minutes, and GM Daewoo is then able to mine through that data to see how much energy is used to produce each vehicle. "We're providing an M2M management solution so they can then use that information to improve their processes, without having to go read meters," says Marston.

With all this consumption information at their fingertips, GM Daewoo employees will be able to whittle down the electricity, gas, water, and other resources used in order to create greener vehicles. Marston calls the system "a green

initiative to try to reduce the amount of energy they use to produce a car.”

Instead of turning down thermostats and avoiding peak usage times, GM Daewoo is actually changing the way it builds cars in order to manufacture each vehicle in the most efficient way possible.

HAND-IN-HAND

If there's one thing companies are interested in right now, it's slashing expenses. In addition, many organizations seem to have caught green fever, as eco-friendly practices become the “in” thing to do. This combination of factors could potentially create a perfect opening for M2M technology. But while green technology initiatives, and especially energy savings, are undoubtedly a growing area for M2M, these applications will not necessarily act as a magic bullet to bring M2M to the masses.

Robin Duke-Woolley, CEO, Beecham Research Ltd., www.beechamresearch.com, London, U.K., says M2M energy management solutions are usually adopted either to save money or meet regulations. “Corporate adopters can justify energy monitoring and control from a cost/benefit perspective, but after adopting, this does not necessarily mean additional M2M applications ... will be introduced,” says Duke-Woolley. He explains all implementations must still pass the test of whether or not their business case makes sense, and employing M2M for green will not necessarily lead to wider M2M adoption.

But putting M2M to work for green initiatives at least offers companies exposure to the technology. Duke-Woolley says that, “having introduced one set of M2M solutions and succeeded to implement them, managers will tend to be more disposed to examining further similar opportunities for improvement.”

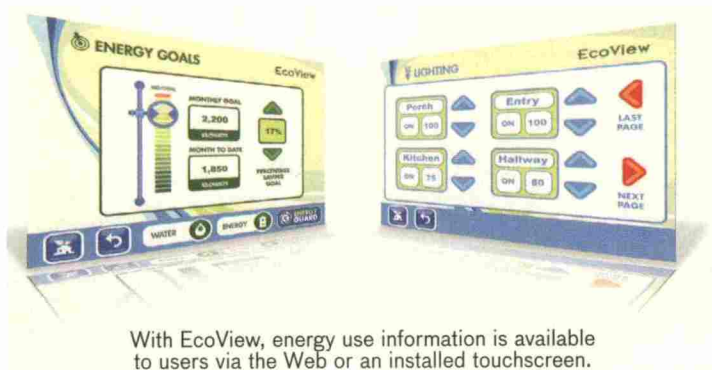
Solutions related to smarter energy use represent a major segment of the green market for M2M. While individual companies are working to implement energy-management systems, M2M is also viable for smart energy on a

wider scale.

In the short term, Duke-Woolley believes smart metering and the smart grid offer immediate growth prospects for M2M. He says smart metering projects are “coming to the top of the agenda in all regions worldwide,” and that these programs are “substantially justified on the basis of energy conservation and reducing CO2 emissions.”

Looking further into the future, Duke-Woolley sees opportunity for M2M in alternative energy generation, such as for monitoring and control solutions for distributed generation.

Until these widespread changes in the way the world produces and uses energy come about, individual companies will continue to green their enterprises through M2M. This means consumers can expect to buy more sandwiches, cars, and other goods that are lighter on energy. ■



With EcoView, energy use information is available to users via the Web or an installed touchscreen.