



THE CONTRACTOR'S SYSTEM OPTIMIZATION OPPORTUNITY

Technological advances might seem geared toward the facility manager, but there's upside in this sector for the contractor, too

By Robert Beverly, ACHR NEWS Staff

Once upon a time, a facility manager plus an internal team or third-party contractor qualified as an "energy optimization strategy" for many commercial or institutional owners. Not so much anymore.

Technology steering HVAC systems to their leanest, most efficient performance continues to grow, evidenced by the bloom of cloud-based tools and the capabilities of AI and twinning.

But what do the latest wave of optimization possibilities mean for HVAC contractors? If done right, fewer and more efficient service calls plus deepened relationships with customers.

FILTERING DATA AND LOSING THE DOUBLE-DIP

Optimization advances manifest themselves both in companies that provide standalone software and in expanded offerings from equipment manufacturers.

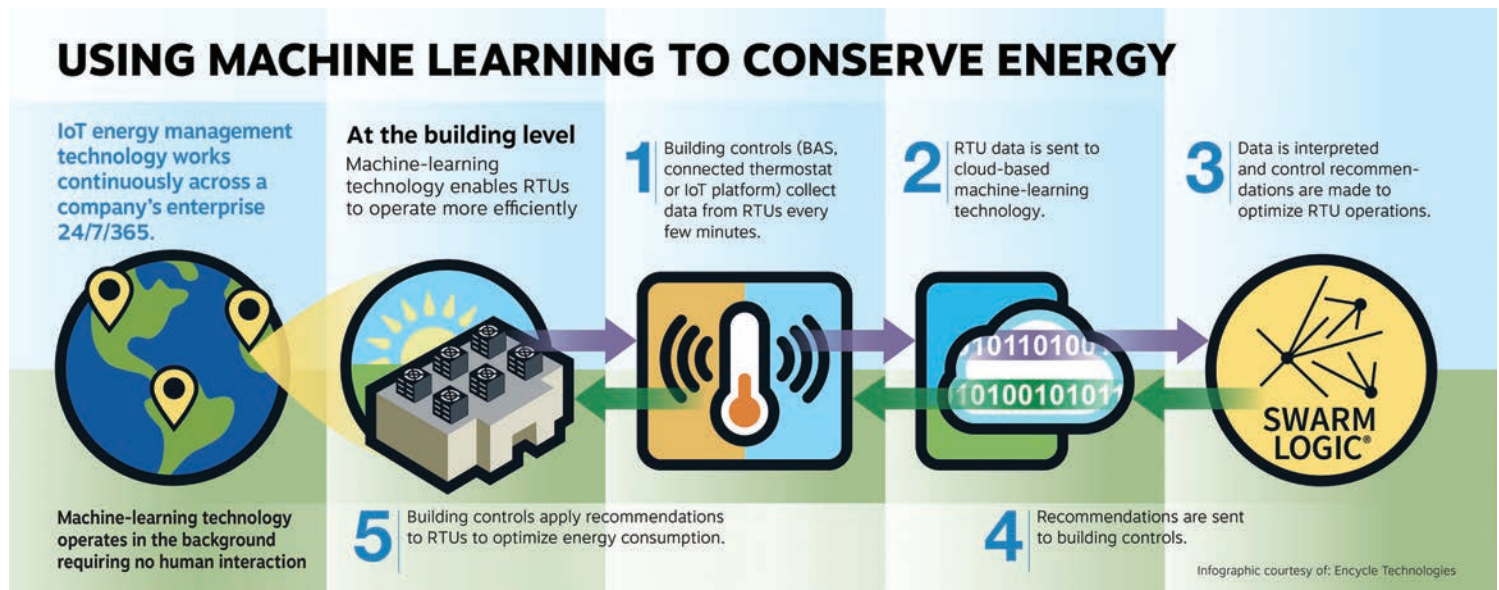
Encycle can serve as an example of the former. Its product, Swarm Logic®, is a cloud-based software-as-a-service (SaaS) tool for commercial and

industrial customers looking to maximize system efficiency along with the financial and environmental benefits that entails. The company says Swarm Logic "routinely reduces HVAC electric costs and consumption by 10 to 20 percent with little or no capital investment."

Chris Hensley, Encycle executive vice president of sales and marketing, sees clients looking at these efficiencies as a "key driver in their adoption of IoT-based strategies." Most recently, Swarm Logic updated its web-based Swarm Portal® to give users improvements in HVAC fault diagnostics, automatic import of site meter and submeter info, and real-time energy savings analytics. The product also now ranks or filters identified HVAC issues according to impact, duration, and/or type of issue.

Meanwhile, Johnson Controls' Verasys® illustrates progress on the manufacturer side. As many contractors know, Verasys was designed from the start to provide a single web-based user interface for operating HVAC and in some cases other building systems.

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However, Michael Bonellis, commercial product manager for ducted systems at Johnson Controls, recognizes there was room for improvement.

"One of the primary obstacles with Verasys and like systems has been the integration of third-party equipment by other manufacturers," Bonellis said. "To do so often meant field-retrofitting the equipment with a system-specific controller and causing the owner to 'further spend' on an existing investment for Verasys integration. This is known as 'double-dipping' in controls."

For that reason, Bonelli and customers can look forward to the October release of Verasys 4.0. That release will provide integration with any BACnet device, no third-party add-on controller purchases necessary.

As consumers of various personal tech devices can attest, there can be a wide difference between what an item can do and what a given user actually knows how to make it do, or even tries to do with it.

One familiar saying goes, "You can't manage what you don't measure," – or another variation, "If you can't measure it, you're just guessing." However, things are not quite that dire.

"In truth, you can't manage (or reduce) energy as much if you don't measure, but you still can save," said Donald Newell, P.E., CEM, LEED AP. Newell is vice president, energy services, for EMCOR Building Services.

"For example," he explained, "simply focusing on

major equipment (and lighting) operating schedules, proper setpoints, and properly functioning outside air economizers may lead to 10 percent or more savings alone."

That said, Newell does emphasize that better tracking "will always lead to larger (and sustained) savings."

The real 21st-century challenge is what, out of the mountains of data generated, can actually translate to improved decisions and habits.

"Although there always seems to be plenty of new tools/technologies being introduced," Newell said, "if they don't drive action, it doesn't matter."

KNOW WHAT CONDITION THEIR CONDITION IS IN

Likewise, contractors need to see a path to growth of their own for this evolution to matter much to them.

Mark Pipher is general manager and vice president at FacilityConnex, which sums up its fault detection, monitoring, and diagnostics product as "the voice of your equipment." Pipher said that this sort of monitoring-based continuous commissioning drives new opportunities for HVAC contractors, especially in controls optimization and preventive maintenance. Part of the opportunity is due to the nonstop system assessment and how that changes the game for addressing the situation.

The result is "more than a schedule," he said, enabling more of an ongoing "condition-aware" state.

Talking Predictive Maintenance with EMCOR

In commenting for this article, Donald Newell, P.E., CEM, LEED AP, took a look at some of the details and real-life opportunities where predictive maintenance can shine, excerpted here. Newell is vice president, energy services for EMCOR Building Services.

Predictive maintenance technology is a great opportunity – one where the customer and contractor’s goals are often aligned. At minimum, contractors should be recommending vibration analysis for equipment that is larger in capacity or serving more critical spaces.

Tools and associated data services are now available that enable automated identification of potential failure based on thousands of past tests on similar equipment. (Note: Studies have shown that 40 percent or more of existing equipment has actionable issues.)

Often, contractors will provide this when something’s clearly wrong, but those who incorporate this into their routine services (quarterly or even annually as part of their maintenance program) can take it to the next level and begin to identify equipment operating anomalies even sooner by comparison to their own historical data.

The same concept can be applied to anything we can consistently measure. Has the heat exchanger approach been rising over time, such that we should now clean the interior? What’s causing the discharge air temperature to never fall below 60°F during cooling, when it was routinely at 58°F last year?

One key to success is in how the various data and alerts/alarms are organized. For example, creating a few simple “buckets” – such as Critical (has a potential impact a customer’s business), Non-Critical Functional, and Non-Critical Efficiency – tends to increase the likelihood of follow-up and prevents “alarm fatigue” from systems that report everything that might be less than perfect.

At Encycle, Hensley sees a few ways the modern approach can pay off for contractors.

From a product standpoint, having the new source of energy savings to offer customers represents one business edge, he said. Procedurally, the company “partners with select contractors” to offer Swarm Logic – which is subscription-based, translating to “an opportunity for new, recurring revenue” for those contractors – to customers looking to reduce expenses. In addition, Hensley posits that “better performance leads to better relationships.” With contractors able to identify, diagnose, and solve issues faster through predictive maintenance and analysis, he said, “those insights help contractors play a greater role in solving customers’ pain points and helping them maximize the life of their HVAC equipment investments.”

The ultimate target: happier customers, better retention.

THE LEARNING CURVE

Asked if these cloud-based options affect installation or setup for sensors and similar equipment, Pipher at FacilityConneX explained that “these technologies use

existing sensors and BMS info to detect occurrence,” helpful for contractors and more economical for customers. Pipher went on to say that his company’s product, for example, uses all the same terminology familiar to contractors.

“Learning to navigate through the system is the only training required,” he said. Hensley echoed that current technology allows companies like his to minimize the training and streamline every step, from purchase to operation.

Bonelli replied that Verasys continues to use the zone sensors that received a major update in 2019, but he did mention one additional upcoming difference. That Verasys 4.0 release in October will also include a cloning feature for equipment, he said.

In that situation, Verasys can support up to 100 devices connected to its Smart Building Hub. Contractors would then clone setting configurations from one unit and remotely push to all the similar devices they desire, saving considerable time.

He did caution that a contractor new to zoning systems may have a little more homework. In general, though, much is dictated by the complexity of the

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given building.

“If you just have a couple packaged rooftop units serving a diffuser style duct design or constant volume, then the contractor would just need to connect those units” back to the hub, Bonelli said.

“That would be less complex than running thermostat wire. Start-up and commissioning the equipment all remains the same as before, so the training would be minimal.”

The training often may not be extensive, but the choices can be.

“Training is readily available for nearly anything required,” said EMCOR’s Newell, “but the wealth and variety of such training can often become overwhelming.”

As a result, Newell advises contractors to develop a training plan targeted to technician specialties or certain products.

He pointed contractors to manufacturers or distributors, a suggestion that aligns with FacilityConneX offering its own training and with JCI’s Bonelli suggesting that contractors reach out to their local distributor as a first call.

IN THE END ...

From business model to notifications and convenience, every type of company discussed here has developed its own equation for making the most of current possibilities and helping contractors to do the same. Bonelli described how Johnson Controls aims for a “Complete Solution” by leveraging all of its resources and providing something “scalable for them to sell effectively and build relationships.”

Pipher pointed out that many of his FacilityConneX customers have their systems set to notify their third-party contractor of choice directly through the service’s workorder system.

Perhaps the most critical advantage of new-school optimization comes down to an old-school adage: time is money. Pipher reiterated the benefits of providing specific information or causal analysis up front, letting the contractor “come prepared with the right tools, person, and parts,” he said.

“One truck roll.”