It's Only Going to Get Smarter to Stay Comfortable

JOHN ARIZUMI

Advances in AI are making HVAC systems more efficient and economical

AI (artificial intelligence) has been the focus of R&D departments in many industries and that's also long been the case for HVAC. From the most futuristic building in Shanghai to the landmark towers of downtown Honolulu to chic new eateries, intelligent sensing systems are already saving smart builder operators energy, which is money. It's a trend that's only going to keep getting better.

I can speak to what we see happening in our own company. The trends are so important that we even established a separate Carrier Hawaii Controls Division to capitalize on them several years ago.

Today, intelligent controls are an effective way for any manager overseeing a retrofit or new installation to greatly increase the efficiency of their climate control system. By using a shared protocol or language, such as the widely accepted BACnet (Building Automation Control Network) standard, all the various sensors, processors and devices within your HVAC system can communicate with each other.

> The key for building managers will be to stay abreast of innovation and examine each carefully.

Occupancy, temperature and humidity levels, cooling needs and more can be continuously monitored and adjusted in real time. That, of course, saves energy and, better yet, money. The BACnet control platform also interfaces with other protocols so your HVAC system is not locked into any one control system.

A few years ago, web-based interfaces such as Carrier's i-VU system came to the fore as a revolutionary means of further increasing the efficiency of these systems. These allow remote control of climate zones, set points and more, as well as graphical reporting and alarms if there are any problems. As AI advances, it is likely to be able to assume even more of this control for managers, at a higher level of efficiency. These intelligent systems can already automate processes such as generating highly accurate monthly individual tenant billing reports. They are likely to get even more powerful.

In fact, as far as the HVAC industry is concerned, AI is already providing opportunities to improve maintenance, comfort and energy savings. For example, some AI-enabled systems use predictive modeling to foresee when a breakdown may occur, giving contractors time to fix the issue before it results in downtime.

Other systems use AI to monitor and analyze conditions inside a space, as well as outdoors, and constantly make adjustments to the environment based on the data being collected. This leads to not only more comfortable occupants, but lower energy bills for building owners.

Advances in AI are likely to lead to even more benefits for building managers. For example, using data analysis instead of lengthy trial and error to set operating parameters will save both man-hours and energy costs. Improved diagnostics based on a mass amount of shared data will reduce downtime, speed repairs and potentially reduce costs for insuring against catastrophic equipment failures.

As the advances roll out, the key for building managers will be to stay abreast of innovation and examine each carefully. By gauging the capital investment against reduced energy, manpower, maintenance and lifecycle replacement costs, smart operators will be able to fully benefit from the advances AI is bringing to the industry. ❖

John Arizumi is the president of Carrier Hawaii, the largest air conditioning distributor in Hawaii with locations on three islands. Mr. Arizumi is a past president of the American Society of Heating, Refrigerating and Air Conditioning Engineers, Hawaii Chapter. For more information: 677-6339 or visit carrierhawaii.com.