

Technology will transform the commercial HVAC market. Here's what contractors need to do to stay competitive.

INTRODUCTION

Building systems already have the ability to capture and send massive amounts of data to building owners and operators that they have not previously had. Analysis will help them make better decisions about how they run their buildings, how they conduct repairs and maintenance, and how they make capital improvements. Ultimately, these data applications will also flow back into new building designs, engineering and system selection. They will change the built environment.

We have just begun down the path of turning our buildings into “big data engines.” Contractors will be affected by it, and it won't just be service contractors or design/build contractors. Many contractors may remain passive and do not understand what is happening, but they should be aware of how big data will change the ways that buildings and building systems are designed. HVAC contractors, who have the connections and insight to be on the front end of transformations, can become more valuable to the owner in a consulting capacity by suggesting what kind of data systems are required. They can also help adjust systems to be more efficient and effective, resulting in buildings that are cheaper and faster to construct, as well as function better.

Some service contractors already get it, but our initial research indicates that the awareness of how this phenomenon is already transforming the built environment is low among HVAC contractors, particularly those who are exclusively focused on new construction. The new construction sector will be impacted and the participants should pay attention. Businesses won't suddenly die, but over time they will have less control and influence and face margin-erosion.

The underlying technology that enables what is described above is the *Internet of Things*, commonly abbreviated as IoT. Merriam Webster defines the

Internet of Things as: “the networking capability that allows information to be sent to and received from objects and devices (such as fixtures and kitchen appliances) using the Internet. The Internet of Things really comes together with the connection of sensors and machines.”

These sensors and machines, when connected to the components of building systems, are what ultimately turn buildings into big data engines. One new company, Enertiv, boasts of already having more than five billion hours of asset performance data captured. Another recent startup, Senseware, was able to help a client develop a real-time response to Indoor Air Quality (IAQ) problems caused by wildfires in California. This solution was used to assure that air quality was maintained by pinpointing the specific locations and times of the worst problems so the HVAC settings could be adjusted to alleviate problems.

These two examples show both the incredible analytic power of the big data, as well as how these building systems can be deployed to quickly solve specific and acute problems in the built environment.

Firms that have the will, interest and motivation to enter the IoT market have a great opportunity to gain a competitive advantage. They are on the front edge of a trend. IoT technology will disrupt the commercial HVAC industry over the next 10 years, and the main driver of that disruption will be changing customer expectations.

HOW DO THE END USERS VIEW IoT FOR BUILDING SYSTEMS AND HVAC?

Owners and end users are in the early stages of figuring out what IoT means for their buildings, factories and other capital assets. As one would imagine, there is a wide range of definitions being expressed. The majority