How connectivity is changing the mechanical contracting industry

Aug 5, 2015 **Kirk Heminger**

- What's speeding the pace of change?
- What are the benefits?
- Will things evolve?
- What should a contractor do now?

The ability for people and inanimate objects to be constantly connected via the Internet is driving change for everyone, including mechanical contractors. It seems like the whole world is talking about smart cities, smart buildings and smart equipment filled with smart components that can speak with each other and your smart phone or tablet.

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To keep the scope manageable, this article will focus on what mechanical contractors need to know about the Internet of Things (IoT) and Internet-enabled mobile devices.

The Internet of Things (IoT)

Let me explain what I mean by IoT: IoT encompasses linking components or systems with network connectivity, enabling them to track, send and receive data with the Internet and/or each other. For example, the "things" could be mobile devices or components in rooftop air conditioning units that send automatic notifications of issues before they become problems.

For decades, the building automation industry has been promising (and sometimes delivering) connectivity across all building technical services such as HVAC, lighting, elevators, security and fire protection. The problem has been that solutions have been expensive, and the systems didn't control all of a building's systems. The big difference is that today's smart equipment shifts to more open communication and connectivity between all devices and systems within a building.

What's speeding the pace of change? Smaller, lower-cost computers, more affordable data storage, and relative ease of transmitting data to the cloud have all played a role. The desire for energy savings, on a political, social and economic level have also contributed.

What are the benefits? For building owners, it means energy efficiency by centrally controlling usage, and knowing which units are running inefficiently. For occupants, it means greater comfort and reduced likelihood of sweltering or shivering through an outage. But what does it mean for a mechanical contractor?

For mechanical contractors, a big change will be in the level of service they can provide to their customers. Contractors will be able to dispatch technicians proactively, arriving before issues become problems — even before the component begins running inefficiently — with the right parts in hand, ready to solve the issue on the first call.

Will things evolve? Yes. Energy companies, component providers, general contractors, building owners and mechanical contractors all have different perspectives about who should own all this data. A new breed of data analytics companies may even emerge to manage this type of data.

"Who will control the data is a hot topic right now," said Michal Faddis, head of experience design at VOKAL Interactive, a Chicago-based consulting firm that specializes in helping organizations to be more user-experience-focused. "Data is data, but the real power is in controlling this data and turning it into actual information and getting it efficiently into the hands of the right people at the right time. But it's really up in the air right now, in construction and in other industries, who is going to really own this data."

Internet-Enabled Mobile Devices

Another change is related to the use of Internet-enabled mobile devices. While contractors have been using mobile devices for over a decade, the dust has begun to settle to the point that best practices are emerging.

Device preference: Software capabilities mean little if user adoption is low. Some field techs resisted using clunky devices, entering only portions of information, or refusing entirely. With skilled labor at a premium, many contracting firms balked at forcing their best technicians to adopt practices they despised, fearing they might lose good people to their competition.

Apps on popular devices such as iPads have nearly eliminated these concerns. The user interface is now often very easy to learn and use. The Waldinger Corp., who operates in Iowa and Nebraska, uses PENTA Mobile Field Service on iPads. Dave Miller, senior VP of operations, said, "All of our technicians have embraced it… and you'd have a hard time prying it out of their hands."

Centralization: The number of construction and field service apps that have cropped up has been impressive (ok, maybe overwhelming). Initially, contractors evaluated each app cautiously, but the evaluation periods have become shorter and shorter. Unfortunately for contractors who adopted a variety of apps, it sometimes took a few months to realize that the integration wasn't what they'd hoped for.

Unexpected integration pains won't reduce the need for field connectivity, but the desire to avoid these integration issues has increased demand for unified systems. Many contractors are opting for a single system with broad capabilities that are accessible by field and back office personnel.

Graphical data: In this era of Big Data, contracting firms want data to empower their teams, not to overwhelm them. Users are looking for systems that present real-time data that is relevant for each person's job, presented in a graphical format, so that problem areas standout. Data should be accessible on a variety of devices from wherever they are…and that applies to everyone, not just field workers.

So does that mean everyone should stare all day at the graphs in their software, watching for a spike? No! Some systems also allow users to receive proactive email alerts of potential issues that are relevant to their role. This type of early warning system allows team members to take action before issues become problems.

What should a contractor do now?

"Understand the higher level capabilities of the entire ecosystem…an app is not a strategy," said Faddis. "Also, understand what kind of information your customers want, and what they want to do with it. Your customers are looking to you for advice on which components you recommend, and even to advise them about capabilities they should care about, even if they aren't yet aware of them."

While efficiency and longevity of components will still be important, the information the components gather, and the user-experience of the controlling system will be additional factors your customers will consider.

Many higher-level commercial capabilities are gaining traction as they become well-known on a consumer level. TV ads abound that tout the ability to control home lighting, heating or garage doors from a smart-phone. So be prepared when your customers ask: If consumers can have this level of control for their homes, shouldn't I be able to have it for my facility?

Choose your partners wisely

Whether it is your suppliers, your general contractors or your software company, take the time to understand your partners' long-term plans. You'd like to believe they value you as long-term partner and their plans align with yours, but you won't know for sure if you don't make a point of knowing.

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