



HVAC Controls: Top Trends for 2015



HVAC Controls:

Top Trends for 2015

As the world becomes more concerned about carbon emissions and energy consumption, the overall efficiency of commercial buildings will remain a key area of focus. The processes and products used by buildings in 2015 will keep evolving as manufacturers, integrators and building owners continue to experiment in order to find better ways of cutting wasteful energy usage.

The top trends for 2015 in heating, ventilating and air conditioning (HVAC) controls include the following:

- Increased integration of HVAC controls with other building systems, such as lighting and access control
- Further proliferation of smart thermostats is expected
- Proprietary protocols continue to slowly make their way out the door but will remain present and important
- Smart buildings, the smart grid and smart cities will increasingly move center stage
- A raft of new regulations will take effect for air conditioners

If you would like to speak with one of our analysts on any of the topics covered in this white paper, or to discuss our HVAC service offering, please contact us.

Thank you,

The IHS Technology Building Technologies Team

Paul.Everett@ihs.com

For more information on IHS research relevant to this topic, refer to the [Building Technologies](#) research area, under the [Industrial, Security & Medical Technology](#) industry, of [IHS Technology](#).

Increased integration of HVAC controls with other building systems, such as lighting and access control

As buildings take advantage of automation to streamline building systems, using that automation to its full potential remains an important topic. In 2015 the industry should see many more buildings looking to gain more synergy among disparate systems in hopes of achieving better efficiency. One example is the integration of HVAC controls with access control technology. By incorporating into a single platform, an HVAC system can begin a more aggressive level of cooling or heating in the morning after the first person badges into an office or factory. At the end of the day, after the last employee badges out, the system can then go into a state of low-power consumption until the next morning. By combining these seemingly unconnected technologies, buildings will be able to become much smarter and offer much more in energy savings.

Further proliferation of smart thermostats is expected

Smart thermostats, such as the Nest or Lyric, have become a viable option outside of the residential space and have moved into the commercial arena for small and midsize office buildings during the past year. One key factor in smaller commercial buildings using smart thermostats is that the product allows for a quick and immediate boost in energy efficiency while having little to no installation costs. Furthermore, smart thermostats are automatically updated with the latest firmware and algorithms. These updates, coupled with the learning ability of the thermostats, help increase energy efficiency over the lifetime of the product with minimal effort on the part of the building owner or tenant. Nonetheless, HVAC control systems have a very high first-time expense and the system, in many cases, has to be manually and routinely adjusted by integrators to reach peak efficiency. This has been recognized as a necessary expense in larger buildings that have many rooms and floors which may need a higher amount of customization, but do not provide the same return on investment in smaller buildings, which feature less diversity in cooling and heating needs.

Proprietary protocols continue to slowly make their way out the door but will remain present and important

Consumers in recent years have requested more interoperability for HVAC control systems, so that they need not be required to use a single manufacturer for the lifetime of a building. This led to control manufacturers slowly using BACnet or LonWorks to advertise to prospective clients that their systems were now open and ready for interoperability. While the claim of open protocols applies at the field level, it is not entirely true at the management level, as IHS estimated that 14.2 percent of all worldwide controllers in 2014 still used proprietary protocols. The figure is expected to decline in 2015, but only slightly to 12.6 percent. This means that while manufacturers and integrators may tout the openness of systems and interoperability, systems being installed may not have the seamless integration that consumers are expecting. Attention to this area in the coming year is expected, as different building systems are integrated together. The ease at which a prospective client can integrate such systems together in the future may be the deciding factor on which control manufacturer a building chooses to do business with.

Smart buildings, the smart grid and smart cities will increasingly move center stage

More efficient buildings make up just one step in the goal to create truly efficient cities. In 2015 as buildings continue to feature increased automation and smarter appliances, more communication and data points will be available. The increasing number of data points from connected devices will not only help a building become more efficient, it will also allow a city's power grid to be better at limiting waste. For example, the amount of wind in an area is never constant, so wind-created energy can be very sporadic. This leaves cities with excess energy, which they cannot store, at nonpeak hours. As a workaround, some power grid systems are now starting to attain the capability to communicate such an occurrence with building systems and appliances, enabling HVAC equipment to take advantage of cheaper energy costs. The hope is that HVAC systems and household equipment, like dishwashers and laundry machines, can be programmed to run at times when usage will not put unnecessary stress on a power

grid. This type of communication among systems will continue to see strong interest around the world as cities become increasingly and truly smart.

A raft of new regulations will take effect for air conditioners

As governments become more conscious of the amount of energy being used and of the levels of carbon dioxide being given off by HVAC equipment, legislation regulating the market has aimed to improve the efficiency of HVAC products. One such law that goes into effect in the United States on January 1, 2015, will change heating and cooling efficiency standards in the country, but will affect northern and southern states differently. In the northern states, where heating capabilities are more important than cooling capabilities, manufacturers will only be able to sell furnaces at an annual fuel utilization efficiency (AFUE) rate of 90 percent. In doing so, however, manufacturers will postpone a move to use air conditioners rated at 14 seasonal energy efficiency ratios (SEER). In the southern states, all air conditioners sold after January 1, 2015, will need to meet the rating of 14 SEER, even though furnaces will only need to have an AFUE of 80 percent.