

Many manufactures believe the future of the HVAC industry relies on innovations in automation and electronic control technologies.

Every heating, ventilation, air conditioning, and refrigeration unit has electronic drive controls and logic circuits to keep the drives and motors running at the optimum temperatures and speeds.

The development of the Internet of Things (IoT) has enabled smart features for commercial HVAC systems. Advanced IoT-enabled sensors can provide a wealth of information relevant to HVAC customers, manufacturers and maintenance services.

Smart HVAC systems have proven their ability to provide user customization, generate maintenance alerts, maximize comfort and reduce energy consumption — and they will continue to improve as IoT technology grows.

The HVAC industry has put a larger emphasis to automating sales and services processes with CRM software to establish customer preferences and ensure the best buying experience possible.

EVERYTHING UNDER CONTROL TRENDS & TALK FOR THE MANUFACTURING INDUSTRY

c3controls is pleased to present second in a series of informative articles that will provide information on the latest advancements that affect the way manufacturers are designing and building machinery today.



Commercial HVAC Industry New Trends in Technology

Commercial Heating, Ventilation, and Air Conditioning (HVAC) is the technology of indoor environmental control and comfort. There are numerous facets of developing technology emerging that will impact the way HVAC manufacturers, maintenance service companies and users interact in the future.

In this issue of *EVERYTHING UNDER CONTROL*, c3controls is pleased to provide an overview of some of these advancements in technologies for the HVAC industry. We will touch on how Smart Systems, Smart Sensors, and Internet of Things (IoT) are changing many aspects of how the industry will conduct business today.

New technology trends in the HVAC industry

Advancements in the HVAC industry offer technology that is changing many aspects of how the industry will conduct business today and moving forward.

- Smart HVAC Systems employ Smart Sensors to keep critical control and maintenance data automatically updated and easily accessible. Users can remotely customize their settings through apps — and contractors can access early alerts and critical diagnostics in online reports.
- Smart Sensors are designed to gather measurements on many factors and transfer information to a central database. The database connects the HVAC system to the internet providing status to apps and dashboards with important information.
- The development of the Internet of Things (IoT) has enabled smart features for commercial HVAC systems. Advanced IoT-enabled sensors can provide a wealth of information relevant to HVAC customers, manufacturers and maintenance services.
- Remote Monitoring will continue to see growth in 2021 and beyond. Service providers are beginning to rely less on clients identifying and reporting heating/cooling issues and more on information they receive directly from the system itself.
- HVAC equipment consumes a substantial portion of energy in commercial buildings, so commercial users are placing an increased emphasis on Sustainable Technology. Methods such as DeVAP (desiccant enhanced evaporate) are leading the way for environmentally friendly HVAC use.

The Department of Energy reports that HVAC accounts for over 40% of Americans' utility bills. Upgrading to more sophisticated HVAC systems can reduce a customer's monthly energy costs by 30% on average.



- Many HVAC manufacturers are using or considering Software as a Service. SaaS is a software distribution licensing method in which a service provider gives customers access to software through the internet and does not have to be installed on their computer.
- Companies in the HVAC industry are making it a priority to automate sales and service processes with CRM software to build greater customer relationships. The CRM software will document established customer preferences and help to ensure the best buying experience possible.

Smart Technology shaping the future of the HVAC Industry

Smart technology is a driving factor behind the improvements being made in the HVAC industry today. Smart HVAC Systems employ Smart Sensors to keep critical control and maintenance data automatically updated and easily accessible. Smart technology includes mobile apps that allow building managers to control HVAC technology from one centralized point.

Control dashboards that can be accessed with your mobile phone provides an easy and convenient way to check performance, update settings and view energy consumption trends. It also enables end-users to take more control over both their financial expenditures and their environmental impact.

Alerts providing faster, more efficient maintenance

Smart technologies that provide comprehensive services are emerging. These services provide a platform that connects HVAC users with contractors and maintenance providers and that sends alerts to relay critical maintenance data to both. Some services can automatically schedule maintenance or call emergency technicians as soon as the smart sensors detect a problem.

When technicians arrive to service the unit, they will already have had access to essential diagnostic information prior to assessing and correcting the problem. Smart HVAC systems provide faster response times and more accurate repair assessments — even when users are away from their building.

While user comfort has always been the goal in the design of HVAC systems since their inception, commercial users are placing an increased emphasis on sustainable technology to save on energy consumption.

Artificial Intelligence improving sustainability

While user comfort has always been the goal in the design of HVAC systems since their inception, commercial users are placing an increased emphasis on Sustainable Technology. HVAC equipment consumes a substantial portion of energy in commercial buildings. Many studies estimate 40% to 60% of total building energy consumption depending on climate and other factors.

Fortunately, applying IoT to HVAC systems shows promise for exceeding temperature comfort expectations while optimizing energy usage. Smart HVAC systems are able to optimize power consumption in real time, without any interruption in service. Artificial intelligence (AI) algorithms integrate information between the internal HVAC system and the outside world to moderate thermal comfort and energy use.

Smart HVAC systems have already proven their ability to provide user customization, generate maintenance alerts, maximize comfort and reduce energy consumption — and they will continue to improve as IoT technology grows.

Remote Monitoring saving time and money

Remote monitoring will continue to see growth in 2021 — meaning service providers will continue to rely less on clients identifying and reporting a heating/cooling issue. A building management complaint may come in hours after the problem actually starts. Then a service request must be completed — and by the time the contractor is on the scene, it is likely more time has elapsed.

Remote monitoring can eliminate this lost time and save money as well. It also results in regular maintenance, extending the lifetime of a HVAC system. By proactively performing regular maintenance, the overall costs of maintaining a system can be reduced as much as 40 percent, in addition to ensuring that units are always using the least amount of energy necessary.

DeVAP reducing energy consumption

As sustainable HVAC becomes a rising trend in the industry today, popular methods such as DeVAP (desiccant enhanced evaporate) are leading the way for environmentally friendly HVAC use. DeVAP cools the air using an evaporative cooling system where water is run into a honeycomb media and a fan is blown through the honeycomb, causing the water to evaporate.

The desiccant substance is used to absorb humidity from the cooled air to create dry air and provides a similar feeling to the cooling effect of a traditional AC unit. The DeVAP system is gaining popularity due to its smaller energy consumption and environmentally friendly refrigerant.

Software as a Service streamlining contractor access

Software as a Service, (SaaS) is a software distribution licensing method in which a service provider gives customers access through the internet to applications. The applications are usually ones developed and owned by the provider. The applications allow access to software on a subscription basis using external servers.

SaaS allows each user to access programs via the internet, instead of having to install the software on the user's computer. Using Software as a Service gives contractors a greater degree of control and knowledge over their project and results in a more efficient and accurate system.

CRM raising the level of customer satisfaction

The rise in consumers' expectations is definitely impacting HVAC market trends today. Consumer experience has a tremendous impact on purchase decisions as many customers will cancel a contract due to a poor customer experience.

HVAC businesses are moving toward the use of customer relationship management programs (CRM) to ensure the most convenient and seamless experience as possible for consumers.

With the consumer preference information at your fingertips, you are at an advantage to customize job and customer information to target suitable consumer segments. Companies can raise the level of customer satisfaction using CRM to coordinate customer information and history and will provide an advantage over competitors.

Electronic machine controls for over four decades

We are proud to have played an integral part in the operation and control of the many different types of automation and robotic manufacturing systems for the Commercial HVAC Industry.

We hope you have benefited from our second issue of *EVERYTHING UNDER CONTROL* and have learned something you may not have known before. In future issues, we will provide you with information on the latest trends and advancements for a wide variety of industries that depend on c3controls products as an integral part of their machine controls.

Handling Customer Concerns

Quality at c3controls includes our comprehensive follow-up service after the sale. In order to respond promptly to customers, c3controls has a quality process in place which includes immediate return and replacement of the product to keep our customers' production up and running — as well as a comprehensive review of the product application to determine if the perceived issue is only present under certain conditions.

The goal of the quality process is to identify what specific issues the customer is experiencing with the product — including determining problems that are application specific and to prevent those issues from reoccurring in the future.

Advantage Pricing

We have complete control over our engineering and manufacturing processes, maintain lower overhead costs than our competitors, and offer our factory-direct business model. We offer customers a buying partnership that can save them up to 40% — and has helped our customers improve profitability and cash flow for more than 44 years.

Same-Day Shipping

At c3controls, we know how important it is to get your orders on time, every time. That's why we offer Guaranteed Same-Day Shipping on any order for standard catalog items received by 6:00pm ET. Our customers enjoy peace of mind knowing they will get what they need, when they need it. A promise that we know can help you reduce inventory and save money.

Limited Lifetime Warranty

While other companies claim to offer the highest quality products on the market, at c3controls we guarantee it. We can ensure high quality because we have total control over every aspect of the engineering and manufacturing processes.

Quality that meets your exact requirements

Using our decades of experience, c3controls continues to expand our culture of 'quality' to design products that meet our customers' challenges of today and tomorrow.

c3controls produces durable, well-designed electrical control products that meet global standards for quality and safety — and perform reliably even in the most punishing environments. Ranging from power and actuation to control logic to human machine interface to wiring/cable duct — c3controls offers products that perform the essential control functions that are at the heart of nearly every electrically operated machine and equipment.

For further details on our world-class products, call us today at 724.775.7926 or visit us at www.c3controls.com