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Commercial HVAC Market Forecast

ALSO IN THIS ISSUE:

How to Sell High-Performance Air Upgrades

Commercial Economizer Performance: Bust or Opportunity?

Why High-Performance HVAC Contractors Should Attend AHR Expo

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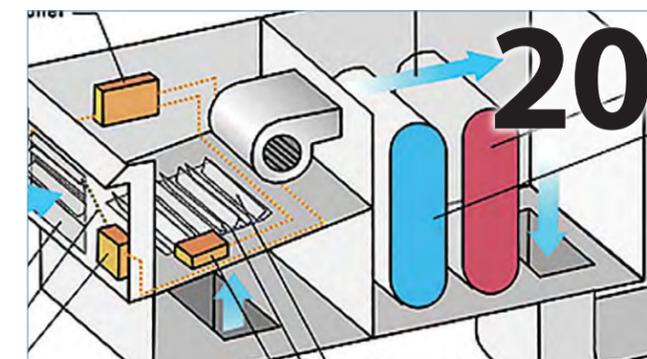
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MANAGEMENT:
2020 Commercial Market Forecast
 Economist Connor Lokar examines the state-of-the-HVAC-Industry and predicts mild headwinds. Despite this, he sees economic growth happening later in the year.



SALES:
How to Sell High-Performance Air Upgrades
 Contractor Vince DiFilippo shares how his company successfully sells air upgrades and uses them as a market differentiator.



TECHNICAL:
Commercial Economizer Performance: Bust or Opportunity?
 Discover why most economizers in Southern California aren't functioning, and what opportunities await contractors. Don Langston of Aire Rite shares his experience.

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ARE YOU
LOOKING FOR
MORE TIME, MONEY OR FREEDOM?

**WE HAVE
THE TRAINING TOOLS
FOR THAT.**



The business toolbox programs are presented by Goodman® and administered by third-party training organizations. All training programs are designed to support independent HVAC contractors who sell Goodman brand products. Any costs for the training programs are determined and charged directly by the third-party training organizations.



Our continuing commitment to quality products may mean a change in specifications without notice.
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Why You Need to Plan to Attend Industry Conferences in 2020

Welcome to 2020. It's perhaps time to take a moment and think about where you want to go and what you want to change in your business and your life in this new year.

With that in mind, I want to talk about the importance of recharging your batteries and your team's batteries by taking yourselves out of the daily grind and attending HVAC Industry conferences and trade shows.

These events have social and educational benefits that the Internet simply cannot provide. Many people today falsely believe that since they can now access industry information via the Internet that the days of the live meeting are gone.

Nothing could be further from the truth.

Attending live events is more important than ever. The value in meetings comes from the human-to-human connections that occur. In other words, it is the people that bring the ROI to your time at a conference.

People often say "hallway conversations" with other attendees provide the most value of attending an event. I agree. When two or more people discuss topics on a deeper and personal level, the learning achieved is equally deep and personal. The value of attending the event to those involved in such conversations becomes irreplaceable.

HVAC INDUSTRY EVENTS

Our industry just so happens to be rich when it comes to available live events. Here are just a few:

- The Air Conditioning, Heating, and Refrigeration Exposition (ahrexpo.com)
- High-Performance HVAC Summit (gotosummit.com)
- Service World Expo (ncilink.com/ServiceWorld)
- EPIC Conference (epic.egia.org/2020).

There are many more events held by trade associations, manufacturers, distributors, and others across the industry throughout the year.

FIVE REASONS WHY YOU SHOULD ATTEND INDUSTRY EVENTS

Sharpening the Saw — Sometimes you have to take a break from the "work" of your work to sharpen your skills. A dull saw won't cut a tree as effectively as a sharp one.

Networking — Sometimes it's about taking a selfie with someone who's influenced you, or sharing a business idea with someone you admire, or making a connection that can lead to finding your next mentor. It's about interacting with peers.

Education and Professional Development — This part is about expanding your knowledge, learning new management and technical tips and tricks, and obtaining greater focus.

Access to Vendors and Suppliers — Whether on an expo floor, or at a few tables around a room, vendors display products, services, and tools that we haven't seen yet. Or they demonstrate apps that make us faster, less prone to mistakes, or give us an edge. Undoubtedly, you can find these products on websites, but isn't it better to get a hands-on demo or be able to ask specific questions?

Fun — Industry conferences can add a layer of enjoyment to managing your career growth. Many events plan fun activities. Never underestimate the power of a little fun mixed with education and interesting people!

Afterwards, all the materials, notes, lessons learned, and contacts you obtain at an event become invaluable reference/contact resources when you get home. Your batteries are recharged and you are ready to take on the challenges of growing and profiting.

Now isn't that worth the investment?



Mike Weil is editor-in-chief and director of communications and publications at National Comfort Institute, Inc. You can reach him at MikeW@ncihvac.com

High-Performance HVAC Contractors: Are You Attending the 2020 AHR Expo?



It is that time of year when the U.S. HVAC Industry gathers for the annual event that sets the groundwork for the upcoming year - the **72nd International Air-Conditioning, Heating, Refrigerating Exposition (AHR Expo)**. The 2020 expo lands in Orlando, FL from February 3-5 at the Orange County Convention Center.

If you've never attended this event, you should. It is the largest HVACR product and educational event in the U.S. and it attracts industry professionals from around the world each year. As High-Performance HVAC professionals, this event gives you a chance to network with contractors, engineers, building owners, manufacturers, trade associations, and distributors.

You can see the latest product and tool/instrument innovations, and attend an amazing array of educational programming, including more than 200 free seminars, new product and technology presentations, professional certifications, and continuing education courses.

In fact, National Comfort Institute and National Balancing Council, once again, are endorsing organizations of the AHR Expo and have been for many years. Be sure to stop by and say hello: **We are in Booth 153.**

FIVE EDUCATIONAL SESSIONS LED BY NCI/NBC TEAM MEMBERS

The NCI team is contributing to the overall industry by presenting five free educational sessions during the AHR Expo event. If you are planning to attend, be sure to participate in at least two of these seminars. They include:

● **Recruit, Train, and Keep Professional Technicians** — Presented by **Rob**

Falke, National Comfort Institute, on Monday, Feb. 3rd at 1 PM in Room W311H

● **Basic Methods of Reading Flow in Hydronic Systems** — Presented by **Scott Fielder**, National Balancing Council of NCI, on Monday, Feb. 3rd at 2:30 PM in Room W311H

● **HVAC Retrofit Paradigm Shift: First, Attack Distribution System; Second, Replace Equipment** — Presented by **Rob Falke**, National Comfort Institute, on Monday, Feb. 3rd at 4 PM in Room W311H

● **No-Nonsense Energy Analysis for HVAC** — Presented by **Ben Lipscomb, P.E.**, National Comfort Institute, on Tuesday, Feb. 4th at 9 AM in Room W311D

● **Advanced Test and Balance Report Review** — Presented by **Scott Fielder**, National Balancing Council of NCI, on Tuesday, Feb. 4th at 3 PM.



REGISTRATION AND HOTELS

For more information about the 2020 AHR Expo, please visit their website at ahrexpo.com.

To register, go to ncilink.com/AHR-2020Reg and for hotel information, go to ncilink.com/AHR2020Hotels.

Written By HVAC Professionals for HVAC Professionals

Dwyer Series 2000 Magnehelic

Here's an oldie but goody. If you're the nostalgic type who enjoys needles bouncing back and forth, the Dwyer magnehelic is just the tool for you. Measuring a whopping zero to one inch of water column, this magnehelic will make you money any time you take it out of its box.

With its bright orange needle and decently large numbers, you'll never question the measurement.

Before you view the measurements, the magnehelic needs to be level to your eyes, front-to-back as well as side-to-side. It comes with two ports so you can measure different pressures across a system component.

The information it provides is worth its weight in gold.

The Series 2000 Magnehelic comes in 81 models with 27 options you can choose from. It can be used for filter monitoring, air velocity measurement (using a Dwyer Pitot tube), fan pressure measurement, duct-room-building pressure measurement, and much more.

It has a zero adjustment screw located in the plastic cover which is accessible without removing the cover. An O-ring seal provides pressure tightness.

The magnehelic is a great visual aid to you and your customers. It allows you to help your customer to see the invisible – what the static should be compared to what the static is. It helps them realize what's been wrong with their system all along.

In return, this device gives you the ability to really use your knowledge and



provide solutions for every customer you encounter.

So don't hesitate, get your money-making device today. To learn more, go to the National Comfort Institute online store at ncilink.com/magnehelic to buy an entire kit that includes the Dwyer Magnehelic.

— By Casey Contreras, National Comfort Institute Field Coach and Instructor

TSI/Alnor EBT 731 Air Capture Hood

Look! It's a bird, it's a plane, no it's an air capture hood. Superman was the coolest: he flies, shoots lasers from his eyes, and even has X-ray vision.

For HVAC contractors, the TSI/Alnor EBT 731 Air Capture Hood won't help you fly or shoot lasers, but will help you see your invisible nemesis: lousy airflow. Lousy airflow haunts every one of your customers' systems.

Using the EBT 731 Air Capture hood will expose invisible lousy airflow so everyone can see it.

Like Superman or any other of your favorite superheros, you will stand out and be different from everyone else. Your appearance will change, you'll sound different, and the customer will never forget you.



The easy-to-use EBT 731 is a lightweight and ergonomically designed capture hood kit that conveniently provides multiple measurement tools in one package. The EBT 731 measures 25 to 3000 cubic feet per minute, enabling you to measure a variety of systems.

Even though the EBT 731 costs a little

more than competitive instruments, it is one that I find I must have in my toolbelt.

Need to measure an out of reach return grill? Use the velocity matrix. Need to prevent catastrophic motor failure? Use the tubing and static pressure tips to turn the EBT 731 into a manometer. Heck, it even comes with its own carrying case.

The EBT 731 is a multi-tool that helps you discover airflow deficiencies with your customers' systems and gives you the strength needed to create the proper solutions.

With this tool, you can end up being your customers' hero.

NCI offers the complete line of EBT 731 hoods and accessories, and is available as part of their Pro-Pack. Learn more at ncilink.com/ProPack.

— By Casey Contreras, National Comfort Institute Field Coach and Instructor

Putting the **TEAM** into *Indoor Comfort*

Adam Rahmanovich will tell you that his company is much more than just a heating and air conditioning company. The difference, he explains, is their customer-first approach to doing business. “This is at the core of our business structure.” He adds that ‘Customer-first’ means honesty and integrity are at the core of everything everyone in the company does every day.

“We spend a lot of time thinking about and finding innovative ways to stay on top. The outcome is a pleasant, knowledgeable workforce that provides great value to our customers by

Indoor Comfort Team. In addition to recognizing that the new company was a merger of two, I also used the name as a base concept for how we operate – as a team.”

INDOOR COMFORT TEAM TODAY

The combined company currently achieves revenues in the mid to high \$3 million range and employs around 32 people.

Indoor Comfort Team fields 18 vehicles. According to Rahmanovich, who is a trained engineer, 80 to 85% of their work is residential. The rest is light commercial. He says that both the residential and light commercial work is handled by the same service/installation technicians.

LIVING THE DREAM

To carry out a Customer-First approach requires being on top of your game and that requires training. Rahmanovich says all his service technicians are highly trained so they meet the highest HVAC industry standards.

“My team is recognized as verified journeymen energy efficiency experts with hundreds of hours of training and years of on-site experience,” he continues. “Our average technician has more than 20 years of experience, with our senior technician having 36 years of experience.

“We also have one of the most seasoned and respected HVAC instruc-

tors in the St. Louis area responsible for training our technicians and keeping our team up-to-date on the latest HVAC technological advancements and industry best practices.”

That instructor, Edward Murphy (Murph) Geigerich, is the Indoor Comfort Team’s service and installation manager. According to Rahmanovich, “He worked for several technical schools as an instructor as well as in the field as a tech himself.”

Murph joined Indoor Comfort Team in 2013 or so.

Rahmanovich adds that because they set their standards high, not everyone who applies to work with the Indoor Comfort Team makes the grade. In fact, according to the Indoor Comfort Team website, less than 0.5% of the technicians who apply pass the company’s initial, in-house HVAC test and can move on to the next level of evaluation.

“We want only the best to serve our customers,” he says.

All Indoor Comfort Team technicians are certified by National Comfort Institute (NCI), the Building Performance Institute (BPI), and the North American Technician Excellence (NATE).

“Our team lives the dream,” he adds. They have careers and are the best at what they do.

STAYING ACTIVE

Rahmanovich tells the story of an instructor he had while he was in

trade school who used to tell the class that ‘One day out is actually one day behind.’

“This means that each day out of the trades is a day that you become out of touch with the changes that happen,” Rahmanovich explains, “and that statement focused me and helped me to take continuous training very seriously. It is my mantra for this company.

“Continuous training is the only way to stay in touch with changes in the industry from a technical and service standpoint.

“Murph believes in continuous training as well. As our service and installation manager, he looks for every opportunity to train and help our field service and installation teams,” says Rahmanovich.

“We use pictures and notations on service and install jobs. Murph uses what he sees in those photos or notes to go over project challenges with the crews the next morning to show them how to do things better.”

Furthermore, Geigerich double checks all equipment sales to be sure

that equipment is best matched for the application, that it is installed right, and later serviced. This is just part of the daily work process.

Rahmanovich says every time there is a slowdown or an opportunity to sit down, he pays his guys to train. Indoor Comfort Team will conduct an hour-long class on a topic.

“We have a small training room that we use all the time,” Rahmanovich says. “It is almost like a small lab. There we work with our team to learn more about the products and equipment we sell, install, and service.”

THE NCI CONNECTION

Rahmanovich says he discovered NCI when he took one of the classes and certification options they offered.

“We just fell in love with NCI’s classes,” he says. Rahmanovich adds that he sends people to such classes as often as possible. Once they have the core training, it’s then just a matter of continuing what Rahmanovich calls maintenance training.

“For us, the good news is we have very little technician turnover and most of the team have already gone through NCI’s training, he says. “We send people for re-certification training and work to keep our local licenses up-to-date. Plus, it is very important we obtain and keep our PEUs up to date and attend any new product training that our vendors offer.”

Most of his guys have been through

and continue to go through training with many HVAC Industry organizations including NCI, Building Performance Institute, Mitsubishi, Trane, Carrier, and so on.

SYSTEM RENOVATIONS AND AIR UPGRADES

Rahmanovich says, “We have always done duct installations and renovation work, but up to the point of getting trained and certified by NCI, we didn’t completely understand how critical a good or well-done air distribution system was. We didn’t understand the importance of duct sizing, and not just sizing using a Duct-o-lator, but sizing by actually measuring and calculating.

Today his techs do static pressure tests on nearly every call. “The fact is, we still don’t do enough duct renovations or duct replacement work. We should do more. But we live in an extremely competitive market and it is sometimes very difficult to convince a homeowner why we charge so much more than our competitors.

“Homeowners think ductwork is ductwork. That it’s all the same. This does hold us back from doing as many renovations as we’d like and that need to be done. But on those projects that we DO get done, we have perfectly happy customers.”

In fact, he says no one ever complains about any duct renovation work that Indoor Comfort Team does. Like

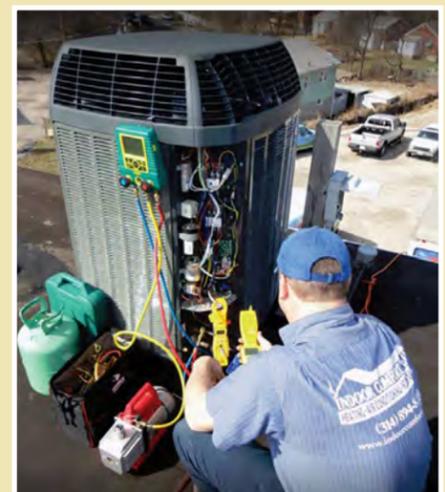


delivering “Comfort You Can Trust.”

Indoor Comfort Team, headquartered in St. Louis, MO, is the result of the successful merger of two separate companies into one ‘team.’

Rahmanovich already owned a small residential and light commercial HVAC service contracting firm which he had started in 2003. When an opportunity to buy another HVAC contracting firm came up, he jumped on it.

The purchase happened at the end of 2005 into 2006. Rahmanovich says, “I realized my last name was not the most marketable name out there, so I created a new company name –





so many other strong Performance-Based Contractors, he has stories about projects where the ductwork needed repairing and replacing but were told their price was too high. The homeowner hires another, less-expensive outfit, and eventually they call Indoor Comfort Team back because they still have areas of the house that are uncomfortable.

According to Rahmanovich, "They often have us come back out and redo the job the Performance-Based way. In other words, they pay twice even though we warned them about it. It is all about communicating correctly."

OVERCOMING OBSTACLES

Rahmanovich says that closing duct renovation or air upgrade sales hit

the first snag when price is discussed.

"When it comes to paying such a higher price, customers develop what I call selective hearing. By that I mean they'd rather hear what the cheaper guy has to say than what we do. Then they either pay twice to get the system to perform correctly, or they are stuck with something substandard.

"From my perspective, we can and do prove that Indoor Comfort Team offers the highest standards when selling duct renovations and air upgrades.

"We can detect problems, diagnose them correctly and repair them properly. We tell them in writing, 'no equipment can fix or overcome ductwork deficiencies.'" Rahmanovich says.

"We set ourselves apart from competitors by surveying all

the accessible ductwork, recording all the measurements, we then assess. Between the sales consultant and the office, we can catch something that contributes to the system not performing as it should.

"This helps us see the bigger picture and allows us to help the homeowner see it as well. Performance-Based Contracting™ helps us overcome objections, sell more, and provide excellent service."

For these reasons and many more, the team here at **High-Performance HVAC Today** magazine selected Indoor Comfort Team as our **January 2020 Contractor Spotlight**.

2020 Commercial HVAC Market: Prepare for Mild Headwinds

As we begin 2020, the U.S. economy is slowing down. We do not yet have 2019 fourth-quarter **U.S. Gross Domestic Product** (GDP) results (they are due out in late January), but results through the third quarter of 2019 show the economy's diminishing growth rate.

This slowing trend has been underway since the second half of 2018 and is consistent with our forecast and what our leading indicators have been suggesting for quite some time.

Our analysis indicates that the economy is on track for further deceleration in the fourth quarter of 2019 and a potential first-quarter 2020 contraction in GDP. However, we anticipate the economy will avoid outright recession in 2020, gaining firmer footing and accelerating during the second half of the year.

That's the good news. The bad news, for you who serve the commercial marketplace, is that you lag the broader macroeconomy. The economic headwinds of 2019 and early 2020 are poised to linger over the industry through 2020 and into 2021.

THE ECONOMIC TRAIN

In my keynote presentations, I often ask folks to think of the overall U.S. economy as a train, with each of its various sectors as different cars.

This is a useful way to show how different sectors experience economic shifts and headwinds at different times. Some sectors are closer to the front of the train, hitting the bends, slopes, and tunnels first, while others are toward the caboose, blissfully unaware of the shifts occurring toward the front.

This is especially apparent when we examine the U.S. construction space. The residential market is nestled close to the locomotive; it is often first into the turbulence of an economic storm, but it is also one of the first sectors to come out of it. At ITR, we see the U.S. housing market as a very important leading indicator – we view its shifts through the business cycle as a likely path for the overall economy as measured by GDP.

This is precisely what we saw play out during the last year, as the new housing market was faltering in late 2018 while the overall economy was still near its business cycle peak. The housing



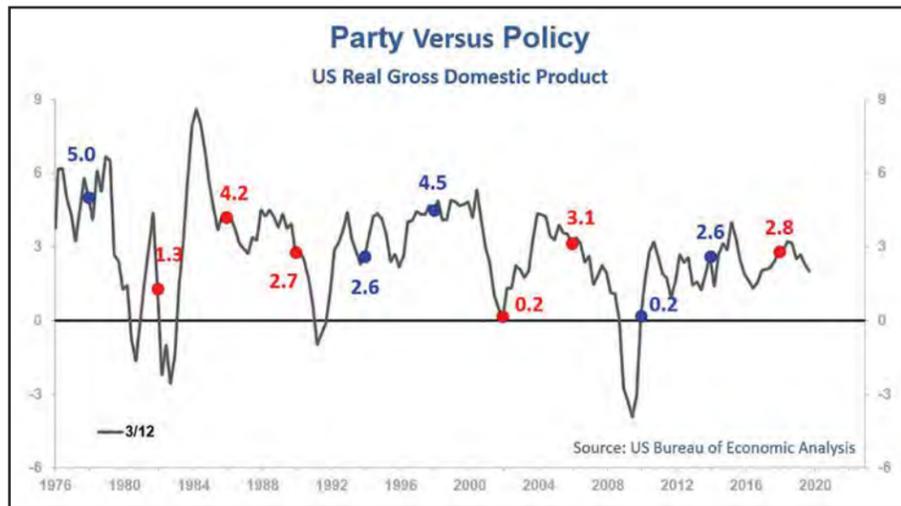
market continued to slow and eventually contracted in 2019, and the U.S. economy has been following just behind, posting diminishing growth rates in 2019.

Now, we see encouraging signals that the new housing market is rounding the corner in early 2020, out in front of the improvement that we anticipate for the overall economy during the second half of the year.

However, the commercial construction market is at the back of the train, which is limping into the opening quarter of 2020.

U.S. Private Nonresidential Construction during the 12 months through October 2019 (most recent data available) is down 0.2% compared to the same 12-month period a year ago. Private Nonresidential Construction lags U.S. GDP through the business cycle by 15 months. In other words, Nonresidential Construction is way back toward the caboose of the train and has yet to feel the brunt of the deceleration currently impacting the U.S. economy.

Much larger than your typical residential project, commercial projects last months at a minimum, if not years. The large size and scale lead to a lethargic response to shifting economic trends; thus, we can expect the



tions through which the U.S. economy suffered a decade ago.

Prepare for some headwinds to impact growth for your construction-tied business, but not a collapse.

POLICY VERSUS PARTY – WHAT MATTERS?

To compound matters, we have officially entered a presidential election year. With the fact that the U.S. economy is slowing down, that makes two converging trends likely to yield grotesquely irresponsible economic reporting and high uncertainty during the next year.

We are known for being apolitical at ITR Economics; we do not favor either political party when it comes

to our analysis of the overall economy. Policy can matter, but history has shown us that the party in the White House does not. The chart illustrates one of the reasons why. The quarterly growth rate for the U.S. GDP (adjusted for inflation) is presented. The blue dots mark the end of the first year of a Democrat’s term in the Oval Office; the red dots depict the same for a Republican. From our perspective, it is not possible to statistically demonstrate that superior growth, or the lack thereof, can be laid at the feet of one party or the other.

From 1976 to the present, the average GDP rate-of-change during Republican administrations was 2.81%; for Democratic administrations, the average was 2.85%. All of which leads us to the point we strive to make in our presentations and conversations: Its policies and what ultimately becomes law or rule or executive order that can (at times) matter, not the party.

At ITR we will keep an eye on any proposed policies that gain ground as the election cycle heats up and provide commentary on whatever business implication they may have. Your job as a reader is to keep your head above the political noise this year and focus on running the business.

“FORTUNATELY, THIS ECONOMIC DOWNTURN IS MILD AND WILL STOP WELL SHORT OF THE RECESSIONARY CONDITIONS OF A DECADE AGO.”

current economic slowdown to linger over the industry into 2021.

Fortunately, this economic downturn is mild and will stop well short of the extreme recessionary condi-

to our analysis of the overall economy. Policy can matter, but history has shown us that the party in the White House does not.

The chart illustrates one of the rea-

THE “PEOPLE PROBLEM”

Despite the macroeconomic slowdown underway and mild headwinds for the industry, finding and keeping talent will remain a big issue. **U.S. Employment of Building Equipment Contractors** – which includes electrical and wiring installation contractors; plumbing, heating, and air conditioning contractors; and other building equipment contractors – is averaging an all-time high of 2.25 million individuals during the most recent 12 months.

Hiring is showing tentative signs of slowing, but **Employment** is still up 4.0% from the same period a year ago. While you should expect hiring to slow nationally into 2020, the trend will stop well short of the rising unemployment typically observed during macroeconomic downturns.

This is not that kind of cycle. Try to leverage the slower growth next year by hiring more talent to prepare you for the next growth cycle.

The challenge for those in the commercial HVAC space in 2020 will be balancing a slowing economic environment

and the bluster and noise emanating from the media surrounding the 2020 general election.

Evaluate your cash position and stay flexible with adequate access to credit as the bottom of the business cycle approaches, with the main goal of avoiding being overly pessimistic in your thinking. We expect accelerating growth in GDP to be gaining traction later in 2020, with greener pastures awaiting in 2021.

Will you be ready to meet that level of demand? Ask yourself how you can leverage the current pause in the business cycle to load up for the next upswing. **NCI**



Connor Lokar is a Program Economist at ITR Economics, a 72-year-old economic research and consulting firm. Lokar specializes in the construction industry and provides economic consulting services for businesses, HVAC trade associations, and Fortune 500 companies. He is a graduate of the economics department of the University of Michigan. His economic insight and forecasting experience play a key role in ITR Economics’ 94.7% forecast accuracy.

To learn more about ITR Economics, visit www.itreconomics.com. Follow Lokar on LinkedIn ([ncilink.com/ConnorLokar](https://www.linkedin.com/in/ncilink.com/ConnorLokar)).

YOUR COMPLETE SUITE OF HVAC & IAQ EQUIPMENT

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- + Micromanometers
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- + Thermal Anemometers
- + Indoor Air Quality Monitors

To learn more, visit tsi.com/comfort

Visit TSI at AHR 2020 in booth 3543!

ALNOR



Coach Your Team to High Performance!

Summit Week

2020

APRIL 5-9, 2020
Scottsdale, AZ

Performance-Based Contractors from across North America will converge in Scottsdale, Arizona to learn, share, build relationships and explore new opportunities, products and services.

ABC: ALWAYS BE COACHING

Throughout Summit Week, you will learn how to coach your team members on specific topics that will help bring your team together as you integrate performance into your company.

COACHING SESSIONS -

Coaching Your Entire Team:

What Is High-Performance Contracting and Why Are We Doing It?

Workshop Leader: David Richardson

Coaching Your Managers:

How We Will Implement High Performance into Our Business

Workshop Leader: Dave DeRose

Coaching Your Technical Team:

How We Will Integrate Performance Testing into Service and Installation

Workshop Leader: Casey Contreras

Coaching Your Sales Team:

How We Will Market and Sell High Performance

Workshop Leader: David Holt

High-Performance Town 2020

Hands-on Testing & Diagnostics Lab

Your Instructors: Rob Falke, Jeff Sturgeon, and Justin Bright

SPECIAL EVENTS -

- NCI Partners Reception and Tradeshow
- Opening Session
- Keynote Speaker
- Idea Meeting
- Awards Banquet
- And More!!!



Don't Miss Out!

Register NOW for
Early-Bird pricing at
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How to Sell High-Performance Air Upgrades

“IT’S ALL GREEK TO ME!!”

This is the look your clients have in their eyes when the service technician/comfort consultant starts explaining why they need ductwork modifications in “air-head” terminology. It’s our fault because we sometimes feel the need to speak in “technical” terms to emphasize the issue. We really do not know how to explain the problems in “English.”

Years ago, I was guilty of this exact thing. When I first was certified by National Comfort Institute (NCI) in air balancing and diagnostics, I thought I was the king and I spoke to my clients in terms to impress them with my new-found knowledge. I quickly learned I was confusing them. They didn’t understand what I was saying, so they chose not to do the upgrades.

My team and I now use analogies and props to discuss airflow issues. This results in a better-educated client and more add-on ductwork upgrades.

Undersized return ductwork example.



Is that not a “win-win” scenario we can all use? One thing to note here, 90% of our customers’ HVAC systems are located in basements, so our analogies/props are based on that.

In our company, comfort consultants are exposed to more opportunities than service technicians, though the following examples can work for both groups.

THE CLIENT INTERVIEW

When one of our consultants first visit a potential customer’s home to provide an estimate, he or she performs a client interview.

We use the NCI Residential Customer

Survey which we have edited to our needs. These are specific questions that give clues to the consultant as to any airflow issues.

We ask clients to be as honest as possible in their answers because we cannot address their issues if we do not know them.

We say things like, “Mrs. Jones, you live here, we do not. You know every little thing that happens in your home. We cannot possibly know what comfort issues you have without your honest input.”

After the interview, the comfort consultant gathers measurements and photos. When they find any abnormalities, they further investigate possible solutions and prepare to speak to the homeowner.

TRANSLATING TECH TO ENGLISH

Here are some of our top analogies and props that we use to explain ductwork issues:

Return Ductwork Gaps and Leaks In Basement. We say, “Mrs. Jones, we found a lot of return duct leaks and gaps in the basement.”

We then show the client the leaks with a smoke stick and explain:

“Air follows the path of least resistance so the HVAC system will pull air from the basement gaps and leaks before it pulls all the way from the second floor. We want to pull air from the rooms being heated and cooled, not the basement. Does that make sense?”

Undersized Return Ductwork. We say, “Mrs. Jones, your return ductwork is undersized and not delivering the proper amount of air to the furnace/air handler. The best way to explain this condition is to think about those old type vacuum cleaners with hoses. If you put your hand over the hose, then no air would come out

the back of the vacuum. This is what’s happening with your system. No air is going in so no air comes out. Does that make sense?”

Return Duct Down-drops With No Elbow. We explain this as follows: “Mrs. Jones, your return duct down-drop is ‘slammed’ against the furnace and the air can’t find its way into the system. This reduces airflow. Can we go into your kitchen so I can show you what’s happening to the air?”

We then ask for a soup ladle and hold it under a stream of water from the sink faucet and it shows the water following the curve of the ladle.

“You see Mrs. Jones, the water is just like airflow and is following the curve. This is why we need to rework the return down drop so the air will



flow into your furnace easier.”

Heat Rises, Cold Air Sinks. Mrs. Jones complains that the house has cold floors on the lower level and the second-floor bedrooms are too hot. This indicates to us that returns on the first floor are probably mounted high on the wall, and returns are non-existent on second-floor, or are located

Demonstrating airflow using a stream of water and a soup ladle makes it visible to customers.

low on the wall near the floor.

Our comfort consultant will say, “Mrs. Jones, cold air is heavy and will always fall. Warm air is light and will always rise. Let me give you an example: Have you ever wondered how the meat products at the supermarket stay cold when the display case is wide open? That’s because the case is filled with heavy cold air.

“The same thing happens when you open the freezer door on your refrigerator, your feet get cold! Installing low returns in the basement will eliminate the cold floors and installing high returns upstairs will cool off the 2nd floor bedrooms.

“Adding low returns will help with comfort issues. Installing high return vents on the wall will help comfort in

UPCOMING 2020 NCI TRAINING SCHEDULE

Airflow Testing & Diagnostics and Refrigerant-Side Performance Bundle

Jan 21-23: Los Alamitos, CA*
Mar 3-5: Tulare, CA*

Airflow Testing & Diagnostics

Jan 21: Los Alamitos, CA*
Mar 3: Tulare, CA*

Refrigerant-Side Performance Certification Program

Jan 22-23: Los Alamitos, CA*
Mar 4-5: Tulare, CA*

Combustion Performance & Carbon Monoxide Safety Certification Program

Jan 21-23: Minneapolis/Golden Valley, MN
Jan 28-30: Atlanta/Union City, GA
Feb 4-6: Sacramento, CA
Feb 4-6: St. Louis/Earth City, MO
Feb 11-13: Charlotte, NC
Feb 18-20: Los Alamitos, CA*
Feb 18-20: Richmond, VA
Mar 10-12: Philadelphia/King of Prussia, PA

Duct System Optimization & Residential Air Balancing Certification Program

Feb 4-6: Pittsburgh/Duquesne, PA
Feb 11-13: Los Alamitos, CA*
Feb 11-13: Baltimore/Glen Burnie, MD
Feb 18-20: Boston/Somerville, MA

Residential HVAC System Performance & Air Balancing Certification Program

Jan 7-9: Jacksonville, FL
Jan 14-16: Austin, TX
Feb 18-20: Cleveland/Sheffield Lake, OH
Feb 18-20: Phoenix/Scottsdale, AZ
Feb 25-27: Salt Lake City/Sandy, UT
Mar 3-5: Los Alamitos, CA*
Mar 3-5: Dallas/Carrollton, TX
Mar 10-12: Newark/Whippany, NJ
Mar 17-19: Atlanta/Union City, GA
Mar 24-26: Cincinnati, OH/Florence, KY
Mar 31- Apr 2: Tampa, FL

Performance-Based Selling Bootcamp

Feb 11-13: Austin, TX

* Subsidized NCI training sponsored by Southern California Edison

Commercial HVAC System Performance Certification Program

Jan 7-8: Los Alamitos, CA*
Mar 31- Apr 1: Baltimore/Halethorpe, MD

Commercial Air Balancing Certification Program

Jan 21-23: Cleveland/Sheffield Lake, OH
Feb 4-6: Los Alamitos, CA*
Feb 4-6: Dallas/Carrollton, TX
Feb 25-27: Milwaukee/West Allis, WI
Feb 25-27: Washington DC/Landover, MD
Mar 31-Apr 2: Newark/South Plainfield, NJ

Optimize Economizer Performance with Certification

Jan 9: Los Alamitos, CA*

National Balancing Council (NBC) Commercial Balancing with Certification

Mar 23-27: Cleveland/Sheffield Lake, OH



Visit [NCIlink.com/ClassSchedule](https://www.nci.com/ClassSchedule) to view the latest schedule of NCI Training events

the second-floor bedrooms by drawing hot air from the ceiling.”

Offering and Explaining Zoning. Sometimes we cannot raise/lower returns nor add additional return ductwork on the different floors to increase comfort. In those cases, we offer the customer zoning. When we recommend a new zoning system, we discuss how it will help solve comfort issues and reduce energy.

“Mrs. Jones, with zoning, you’re only delivering air to the area where you need it,” our Comfort Consultant will say.

“In summer, heat rises so the vents on the first floor close and all the vents on the second floor open. So now instead of the HVAC delivering air to the whole house, you’re only sending

it to the second floor. The force of the air is twice as hard and the air mixes with the heat and helps cool the area much better.

“In the winter cold air sinks, so the second-floor vents close and all the first-floor vents open. The force of air increases, the air mixes, and the area heats twice as fast and with more comfort. In other words, Mrs. Jones, you will heat or cool only the areas you need so your HVAC system will only run when needed. This saves you energy. Does that make sense?”

OVERCOMING OBJECTIONS

How many times have you offered an estimate to a client and they say, “The other companies I’ve called for an estimate say I need a larger air condi-

tioning system and that will solve my comfort problems.”

As professionals, we know it is much better to undersize the system than to oversize it. How do you explain this to a consumer?

Our crew will say something like, “Mrs. Jones, have you ever stayed in a hotel or motel room and the room was not only cold, but it felt “clammy” or moist? This happens when the air conditioning system is oversized. It’s cold but it isn’t removing humidity from the air.

“Oversized systems blow lots of cold air into the home and that causes the thermostat to turn off. The cold air quickly dissipates and then the thermostat turns the air conditioning back on. “This on-off cycle cools the house

but doesn’t allow the air conditioner to run long enough to dehumidify the air. This on-off cycling also shortens the equipment life.

“Mrs. Jones, we want the system to run longer so the air gets dehumidified, the hot air gets returned to the system, and the air mixes in the home. Does that make sense?”

FIXING THE DUCTWORK

In the Northeast, of the few attic systems we service, we often run into the good old short plenum box with massive lengths of flex duct feeding off it like an overgrown octopus.

In these situations, the clients’ biggest comfort complaints are about rooms furthest from the air handler/furnace. Upon investigation, we usu-

ally find flex duct runs to those rooms that are between 20 to 30 feet in length.

Our comfort consultants will say, “Mrs. Jones, your comfort issues are due to poor ductwork design. You have flexible ducts that are too long. Because of this, they slow down the air.

“For example, have you ever used a garden hose to water the flowers? The water stream coming out of the nozzle is pretty good. What happens to the stream when you add another length of hose to it? It’s weak, isn’t it?

“This is what’s happening with your ductwork and airflow. There is more friction in the additional hose just as there is more friction in your ductwork because the air has further to travel.”

Our consultant may add, “To make matters worse, there is a metal “slinky”

that’s wrapped along the whole inner length of the flex duct that is ribbed and slows air even more. Does that make sense? We can correct this condition with ductwork modifications.”

I hope this helps in selling ductwork modifications. Remember, speaking in ‘English’ will help your clients understand the issue. Using props will reinforce what you’re trying to say.

Good luck and stay safe! 



Vince DiFilippo is president of DiFilippo’s Service Co., Paoli, PA. He is a long-time member of National Comfort Institute, is active in a number of national trade associations, a speaker and panelist at several NCI Summit events, and a recipient of NCI’s 2012 Chairman’s Award.

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Speaker: Scott Fielder, Director, National Balancing Council

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Speaker: Scott Fielder, Director, National Balancing Council

Tuesday, February 4

3:00-4:30 pm • Rm. W311H



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Commercial Economizer Performance: Bust or Opportunity?

One of the least understood parts of commercial HVAC — a part that many customers have no idea is even there — is the economizer. An economizer plays an important role in helping keep costs low when providing environmental control for a commercial building.

An economizer is part of rooftop package units — the most common type of HVAC system for businesses. It permits the unit to use outdoor air to help with cooling — as long as the indoor air is cool enough, and the humidity levels are already balanced. Essentially, if it isn't too hot inside your building, the economizer allows the refrigerant-based air conditioning system to take a break while the outdoor air does most of the work.

The building won't have to expend extra electricity to power the compressor in the rooftop air conditioning system. This helps to extend air conditioner equipment life since the compressor will suffer much less stress.

Aside from helping to lower costs by relieving the cooling equipment of some of its job, an economizer is a way to enjoy better ventilation in a

building and improve indoor air quality. Modern commercial buildings often have poor ventilation, which allows for chemicals and VOCs (Volatile Organic Compounds) to build up and affect health and comfort. Economizers can be designed to help detect carbon monoxide and open up to remove it.

CALIFORNIA VERSUS THE WORLD

Obviously, economizers can set the stage for building owners to have much healthier, safer, and environmentally sound indoor environments. This is something that caught the attention of the State of California a long time ago and led to the enactment of the California Energy Commission (CEC) Title 24, Part 6 Code of Regulations.

This code calls for mandatory use of economizers on all commercial and light commercial buildings in the state and it also impacts the residential marketplace. Today, nearly every commercial building throughout the state has an economizer built into its rooftop systems.

But there is very little oversight in how economizers are incorporated or even how they are maintained. The good intent falls to the wayside when 70 to 80% of those already installed don't actually work properly.

DOOMED FROM THE START

The sad fact is, even though economizers are mandated by Title 24, there is little enforcement. Equipment manufacturers will include economizers when they ship equipment, but the economizers are not built-in. In fact, most economizers are manufactured by third parties.

They are usually shipped with the equipment as an accessory in a separate box. Very rarely do they come fully assembled. The chances of them being installed correctly in the field —

even on brand new equipment — is less than 50%.

Add to that the apathy many contractors and building owners have toward this equipment because so many economizers just don't work. When you try to explain to customers the need to either repair or replace them, per the law, they just shrug their shoulders.

With California requiring economizers, many manufacturers look for third party firms to build and provide them at the lowest price point possible. I've found that for a packaged rooftop system under five tons in size, economizers are mostly made of plastic. They may last a year or two at best, then begin to fail.

Most economizer manufacturers provide several economizer options —

economy model, better, and best. Most building owners/managers choose the lower quality one because the mindset is that it will fail anyway.

In other words, economizers are practically doomed from the start — from the time they are manufactured, through field installations, and service.

THE TROUBLE WITH CUSTOMERS

Despite the issues above, Aire Rite successfully sells, installs, and maintains economizers throughout Southern California. We always recommend that customers operate their economizers six months per year. We can show them paybacks in terms of months or weeks for repairs and even replacements. But most customers still balk.

Often the reason is that the build-

ing owner/manager can still feel cold air coming out of the registers despite having economizers that don't work properly. They don't realize that any savings they made with the cheaper economizers they then spend on electricity to run them.

One problem, at least among our customers, is many belong to a national or regional chain or multi-site location and the on-site managers don't pay for electricity. They aren't bonused on reducing electrical use. They don't consider it a controllable expense item on their P&L statements.

To add insult to injury, these same managers don't have any kind of feedback loop to help them visualize the positive impact economizers have on their business.

Airside Economizer.

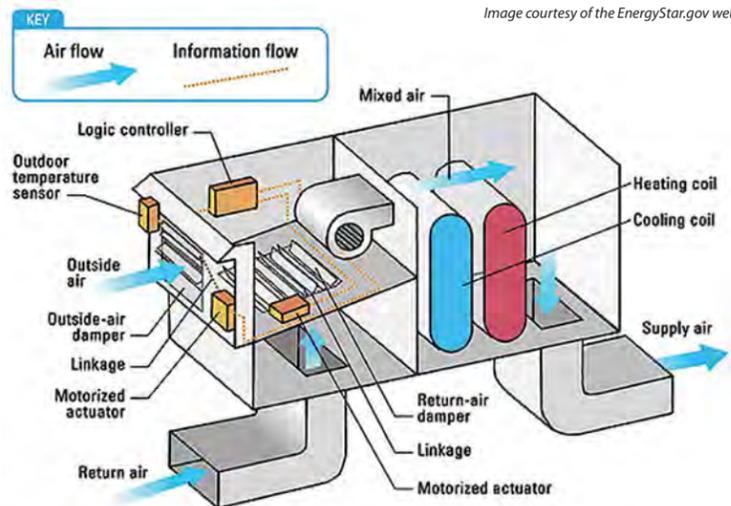


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Recently there has been a big push — mostly by California — to use digital economizer controllers with built-in fault protection diagnostics. This is great. But California doesn't require economizers to be connected to a thermostat within the building.

Instead, this diagnostic capability remains on the roof where it is out of sight, out of mind. This is a huge missed opportunity because if it were connected to a thermostat, economizer alarm conditions could be seen by the customer.

SOME GOOD NEWS

Like any good sales strategy, convincing building owners/managers they need to upgrade or change out their economizers requires contractors and their field personnel to have excellent communication skills. The fact is, most won't pay for upgrades because they don't understand their value.

The good/bad news is that California has one of the highest electrical rates in the country. Anytime you can take a compressor offline — which accounts for 80% of the power consumption in a packaged unit — and can supplement it with free cooling from outside air, customers benefit. All by itself, this is a HUGE value.

If we can actually show building owners/managers the advantages of economizers, by quantifying its value and benefits, we can overcome this apathy towards them. By helping them see how economizers make their jobs and budgets better, they become more open to upgrades and replacements.

The first step is having a connected thermostat within the building space with fault detection that can show owners and managers how long the

economizer is in run mode, as well as how much is being saved based on local electric rates. If they can see that, they will start caring much more.

THE OPPORTUNITY IN CALIFORNIA AND BEYOND

In my mind, new digital economizers can provide customers with the necessary feedback loop. But that is just a starting point. The real key is the education of technicians as well as of building owners/managers.

For technicians, training must go beyond just the technical aspect of how economizers work, how to test and service them, and how to properly install them. They also must learn how to explain the value-benefit proposition to the customer. Contractors who do these things will see success and profits from guaranteeing economizer performance to their customers.

Obviously, technical training is available from virtually every economizer manufacturer and is usually held at the local wholesale-distributor outlet. It is also available from third-party training resources, such as National Comfort Institute here in Southern California. A little research using Google goes a long way to helping you overcome the obstacles in the economizer space.

SO NOW WHAT?

There are five steps to consider to get into the sale, installation, and service of economizers:

□ **Know Your Market** — Are economizers necessary in your area? If so, work with your local distributors and the economizer manufacturers they carry. You also need to learn more about the controllers because every-

thing boils down to them.

□ **Include Economizers in Your Maintenance Agreements** — This is a must.

□ **Develop a Sales Strategy** — Anticipate and know how to answer customer objections to the costs of adding a new economizer or renovating an old one. Show customers how this equipment will help their system provide better comfort, energy savings, and longer overall equipment life. Then make sure to add economizer service to your maintenance agreements.

□ **Price Your Work Appropriately** — Like all good business practices, you need to know what your costs are and price your economizer service/installation offerings with the appropriate profit margins for your company.

□ **Train Your People** — Train them in economizer technology and make them into better craftsmen. But also train them how to best communicate with the customer. This will help them better understand the advantages of having a working, functional economizer as part of their HVAC system.

Yes, the economizer business seems like it is doomed from the start. But it does offer contractors opportunities to help clients resolve real, longstanding energy cost and comfort issues. Contractors who do these things will experience success and profits from guaranteeing economizer performance to their customers. 



Don Langston is president and CEO of Aire Rite Air Conditioning & Refrigeration. His company has worked on economizers for more than 40 years. He also works on emerging technology projects with funding from DOE, California, and state utilities.



2019 HVAC Today Photo-Of-The-Year

National Comfort Institute, Inc. (NCI) and *High-Performance HVAC Today* magazine announce the 2019 HVAC Photo-of-the-Year! This year's winner beat out 10 other entries, receiving 54% of the total votes!

The grand prize winner is one of the eleven 2019 monthly winners as voted upon by visitors to the HVACToday.com website. Besides being featured in both the digital and print edition of the magazine, on the website, and in our social media outlets, the **Photo of the Year Winner** receives the **GRAND PRIZE — a FREE registration to NCI's High-Performance HVAC Summit*** (up to a \$795 value) in Scottsdale, AZ April 5-9, 2020.



THE WINNER IS ...

Nathan Copeland, Copeland & Son, Nashville, TN!

Nathan's entry appeared in the November 2019 issue and was titled, "It's a Wonder You're Still Alive!"

Congratulations to Nathan! We look forward to seeing him in April.

* Airfare and hotel ARE NOT included. The prize is for FULL Summit Registration only.

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Seven Reasons Why You Should Attend NCI's High-Performance HVAC Summit 2020

National Comfort Institute's 2020 High-Performance HVAC Summit is just a few months away. Summit is **THE**



HVAC industry event where High-Performance Contractors network, have fun, break bread, learn, and share their goals and dreams.

Whether you're new to High-Performance Contracting™, or a performance veteran, here are seven top reasons to make Summit 2020 in Scottsdale your destination this April.

1. Networking. NCI Summit is the only place where existing Performance-Based Contractors, and those who want to be, can gather and share experiences. You can meet and hang out with some of the best contractors in the HVAC Industry.

2. Learning. The 2020 event focuses on coaching your team to get on board with the high-performance method.

3. PerformanceTown. It's baaaaack! This live, hands-on training provides three stations for you and your team to solve typical field load performance issues.

4. Idea Session. Contractors gather in a closed-door session to share real resolutions to problems in performance-based marketing, selling, and training. Then you vote on the best solutions and winners receive cash prizes.

5. Golf. Yes, we do have fun at Summit events. This year, with our return to the **We-Ko-Pa Resort** (ncilink.com/wekopa)

in Scottsdale, AZ we will be holding a golf outing at a world-class course. More information is coming soon.

6. NCI Bucks. NCI Members like you can save money by using your NCI Bucks to pay for registrations as well as Pre- and Post-conference training. You can also earn NCI Bucks for what you do pay for: NCI Members earn 5% Bucks and Members with the Learning Excellence subscription earn 15% Bucks for all Summit Week events! (Excluding golf fees)

7. Early Bird. Plus, by registering now you can take advantage of additional savings via our Early Bird pricing. Go to GotoSummit.com for more of the latest information.

Contact your Customer Care representative at 800-633-7058 with any questions. We look forward to seeing you in April.

The January 2020 PowerPack Is Online

Happy New Year and welcome to the January 2020 PowerPack exclu-



sively for NCI Members. Every month we hand-pick several digital tools especially for high-performance contractors to assist you on your journey towards success. For January 2020, we feature the following:

- **Achieve Your Goals Through Delegation** – Webinar
- **Six Steps to Achieving Your Goals** – Online Training

- **The HVAC Industry Needs a Return to Craftsmanship** – Article
- **Strategic Planning and SWOT Analysis with Worksheet** – Download
- **Estimating R-Value Chart** – Download.

Be sure to share your January PowerPack with your entire team! So get started today: ncilink.com/PwrPak

If you have any questions, or if you are unable to access any of the tools in this program, please contact your Customer Care team at 800-633-7058.

NCI's Online University Series: Using Fan Laws

Check out our online training module, "Using Fan Laws." Fan laws are essential tools for adjusting system airflow in equipment with belt-drive motors.

Anyone who services and repairs commercial HVAC equipment will want to explore this three-module series explaining the fundamentals of Fan Law One, Two, and Three.

Module 1 shows you how to apply Fan Law One to calculate change in pulley diameter. You'll also learn how to determine motor RPM required for the airflow you need.

In **Module 2** you'll learn how Fan Law Two lets you calculate what affect adjusting system airflow has on system static pressure.

And finally, **Module 3** shows you how to "predict" what will happen to motor amp draw when you adjust to required system airflow.

As a member, you can purchase access at a reduced rate. Interested in having access to the entire Online University for your entire team?

Check out the Learning Excellence Online package add-on to your membership (ncilink.com/MemberUpgrades).

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Beyond 20/20 Vision for 2020



Dominick Guarino is publisher of *High-Performance HVAC Today* magazine and CEO of National Comfort Institute, Inc. He can be reached at domg@ncihvac.com

I knew I would use this obvious cliché at least once this year, so it might as well be my January column. So what is 20/20 vision? In its most basic definition, it's considered "normal," not perfect vision.

After digging deeper I learned that fractional vision measurements like 20/20 or 20/10 are not actually about how good your vision is, rather they are a measure of visual acuity. The lower the second number, the sharper your visual acuity. The next obvious question is, "what's the difference between vision and visual acuity?"

Visual acuity is strictly about sharpness of vision, or the ability to recognize small objects at greater distances, but vision itself has more subtle yet equally important facets.

In addition to acuity, vision includes contrast sensitivity, the ability to track moving objects with

WHEN'S THE LAST TIME YOU TOOK A GOOD HARD LOOK AT AREAS OF YOUR COMPANY THAT ARE CLEARLY NOT MEETING YOUR EXPECTATIONS, BUT MAYBE YOU HAVE DEVELOPED A BLIND SPOT TO OVER THE YEARS?

smooth and accurate eye movements, color vision, depth perception, focusing speed and accuracy, and more. In other words, vision is much more complex than a single fraction.

What does your vision for your company look like? Let's break it down in optical terms:

CONTRAST SENSITIVITY

Let's start with contrast sensitivity. Basically, it's the ability to distinguish between finer increments of light versus dark. When's the last time you took a good hard look at areas of your company that are clearly not meeting your expectations, but maybe you have developed a blind spot to over the years? It's not necessarily about profit,

although that is a pretty good indicator.

A tough question to ask when considering the viability of a product or service you are currently selling is, "Does this help further the vision of the company, or is it just something we've always done and it feels too painful or disruptive to change or stop doing altogether?"

TRACKING MOVING OBJECTS

What are the moving objects in your business? These are the things that are in constant state of flux or change. Is your market changing? Are your demographics shifting, maybe from a retiring, older population to millennials buying their first homes?

Are your company demographics changing with younger, tech-savvy people entering the workforce? Are you trying to move from basic service and installation to High-Performance Contracting to become more of a solutions-oriented business versus just swapping and fixing boxes?

COLOR VISION

A color vision deficiency is determined with a color-blindness test. Color blindness is not necessarily just seeing things in black and white. Rather it can vary greatly based on the ability to distinguish hues of different colors. How do you "see" your company?

Do you feel like your processes are consistent or are there some areas where you don't have systems that are as clearly defined or consistent with other areas? Do you have some "blindness" to certain people who maybe get away with things that others don't? Or are you not aware enough of your high-performers, or those with great potential, as you should be?

Maybe it's time to look at some of the more subtle hues in our organizations to make sure people are treated fairly and also better recognized for their accomplishments. 

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ComfortMaxx Verify™ - Full System Testing Software	✓		
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Monthly Investment:	\$999	\$450	\$100

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