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Attract and Retain
Good Salespeople



A man with a beard and a woman are seated at a table, looking at brochures. The man is wearing a dark polo shirt with 'ISAAC Heating & Air Conditioning' logo. The woman is wearing a dark t-shirt. They are both looking at a red brochure titled 'ISAAC'. There are other brochures on the table, including one with a 'DOLMI' logo.

ALSO IN THIS ISSUE:

Residential Market Review and Forecast: 2021 Is a Year for Optimism
Translate Data into Solutions Your Customers Seek
The Flue is Too Big?

OFF THE WALL? [GENIUS!]

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MANAGEMENT:
Residential Market Review and Forecast

Editor-in-Chief Mike Weil sees silver linings in 2020 with an economic upturn in 2021. Buckle your seat belts!



SALES:
Translate Test Data into Solutions Your Customers Seek

Offering measureable HVAC system solutions requires you to become a translator, a good listener, and a teacher.

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SALES:
How to Attract and Keep Good Salespeople

Isaac Heating Sales Manager Andrew Torres explains how their culture makes a sales position one to covet.



TECHNICAL:
The Flue is Too Big?

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Will the Hits Keep Coming? For HVAC Contractors, Let's Hope So!



Mike Weil is editor-in-chief and director of communications & publications at National Comfort Institute, Inc. To reach him, go to ncilink.com/ContactMe

Over the course of the last year, with the pandemic raging hard in the Northeastern Ohio area, I've opted to not go out that much. On those rare occasions that I do, I get hit with the reality of COVID's impact on our world, and in my neighborhood.

For example, the other day I went out to run a few errands. One of my stops was to my local bank to grab a cash infusion from the ATM machine. When I got there, the building was empty.

My bank was gone.

I had just been there a few weeks previously and all was "normal," at least as far as I could tell.

Furthermore, across the street from the bank looms the empty hulk of a once-vibrant shopping mall that fell onto hard times (pre-pandemic) and now all the stores and restaurants are also gone.

Today, it too is just an empty shell. Up and down the main drag I saw how many stores and small businesses were shuttered and dark. I felt like I was in an old *Twilight Zone* episode.

The hits from the pandemic just keep on coming. All across the country commercial buildings, schools, libraries, and so many businesses are simply no longer operating. Either they have fallen by the wayside or have transitioned to a digital/online business model.

So the question is, what will happen to all those empty buildings?

RE-PURPOSING GIVES HVAC CONTRACTORS NEW PURPOSE

The good news is that nothing ever kills the American entrepreneurial spirit. In Cleveland, for example, some building owners are renovating structures to better accommodate the new rules for social distancing and safety.

Other buildings are being taken over for things like community kitchens to help local restaurants

meet the incredible new demand for delivery and pickup services. And of course, other parcels of land are being set up and used for medical overflow and vaccine delivery.

This move toward re-purposing buildings is good news. Why? Because every one of these buildings will need HVAC system renovations as well. For the High-Performance HVAC contracting community, this is a wonderful opportunity.

PREPARATION IS KEY

Like everything else in our industry, competition for this work will be fierce. Applying a performance-based approach to testing, measuring, and diagnosing airflow and comfort issues can be a huge advantage.

It doesn't matter if the buildings have all new uses or are being renovated by existing businesses looking to reopen when they can. The need for superior HVAC service and installation is growing, and will continue to do so.

DON'T FORGET ABOUT RESIDENTIAL

As good as the commercial sector is, don't forget about the giant growth in residential renovation and service opportunities. With more people working from home, there is a demand for HVAC systems that operate efficiently and comfortably. Systems that provide safe indoor environments and air quality are more important than ever.

Oh yeah, one more thing: with the COVID vaccines now beginning to circulate, many experts see our economy poised for a serious rebound later in 2021 and beyond.

So let the hits keep on coming. If you set your goals, train your team, and adapt a high performance approach to HVAC contracting, your ability to win in this very changed environment is almost a foregone conclusion.

Written By HVAC Professionals for HVAC Professionals

NATIONAL COMFORT INSTITUTE "PRIORITY CARDS"

Here is something to help you simplify your sales presentation by highlighting the features and benefits of your high-performance HVAC approach in an easy-to-understand way. After all, don't your customers deserve the safest, healthiest, most comfortable, and energy-efficient indoor comfort system they can afford?

The National Comfort Institute (NCI) **Priority Cards** help your customers understand everything they get through your indoor comfort solution. This helps eliminate competition and win you more jobs.

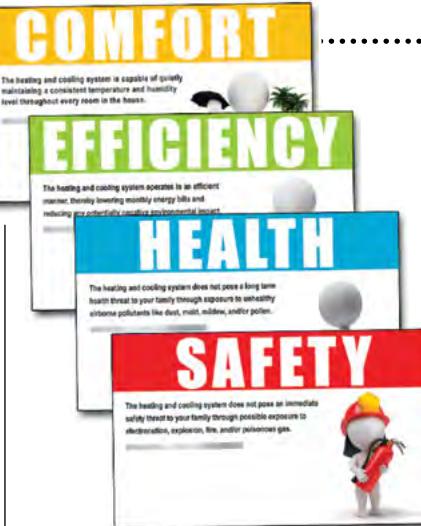
Here is how they work: Comfort Advisors place the cards (with the "definitions" facing up) on the table in front of

the customer and say, "To make sure I design a system that best suits your needs, please read these cards and arrange them in order of their importance to you and your family."

In most cases, we find that customers prioritize them in this order: Safety, Health, Comfort, and Efficiency.

Once they're done, you simply say "Thanks. Let me tell you how our company helps you enjoy each of these important benefits."

Then, start with their top priority. Flip the card over and share how your recommendations address the benefit. Close the current card discussion with, "Can you see how we're going to make sure your system is the safest solution for you and your family?" Change "safest" to "healthiest", "most comfortable", or "energy-efficient",



depending on the card being discussed. Continue with the next card until each has been discussed in order.

When customers clearly see that your approach provides superior value, you eliminate the competition and win more jobs!

To learn more about **NCI Priority cards**, and/or order them for your team, just go to ncilink.com/priority.

-By David Holt, NCI Director of National Accounts

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Residential Market Review and Forecast

2021: A Year to Be Optimistic

Well, 2020 certainly didn't turn out the way everyone predicted in January and February last year. We had this little thing called the COVID-19 Pandemic turn the economy on its head. Or did it? From my perspective, if one only relied on the reports from mainstream media, the economy is a picture of endless doom and gloom.

Truth be told, shutting down the country to battle the virus did lead to mass unemployment, the likes of which haven't been seen since the crippling recessions of the late 1970s and early 1980s.

But there is a difference.

In a press release published in mid-December 2020 by ITR Economics, Economist Lauren Sadel-Baker stated that "Unlike the Great Recession of 2008, which was triggered by underlying economic factors, the 2020 recession was not so triggered."

She said, "The recession of 2020 can be quantified as a natural disaster rather than the result of a regular, fundamentals-driven business cycle. The current economic contraction was triggered by a global pandemic, not by economic imbalances that demanded a correction. Recent economic data corroborates the fact that this case really is different."

While small businesses took the brunt of the disruptions, many large corporations weathered the Pandemic quite well and even prospered in these difficult times.

HVAC INDUSTRY OVERVIEW

Case-in-point: The latest HVAC shipment figures, as compiled by the **Air Conditioning, Heating, and Refrigeration Institute** (AHRI), shows a 21.6% increase in warm-air furnace shipments in October 2020 as compared

to October 2019. Year-to-date U.S. HVAC equipment shipments decreased by 6.5%.

These are the latest figures released by AHRI in December 2020. Shipments are based on numbers provided by the HVAC product manufacturer members.

Furthermore, central air conditioners and air-source heat pump shipments also saw an increase in October, up 57.8% from October 2019. Year-to-date combined shipments of central air conditioners and air-source heat pumps increased by 8.9% during the same period in 2019.

Overall, this was great news for HVAC manufacturers. Yet plenty of contractors began feeling a pinch as the supply chain seemed to shrink. It became harder to obtain the products necessary to service their customers.

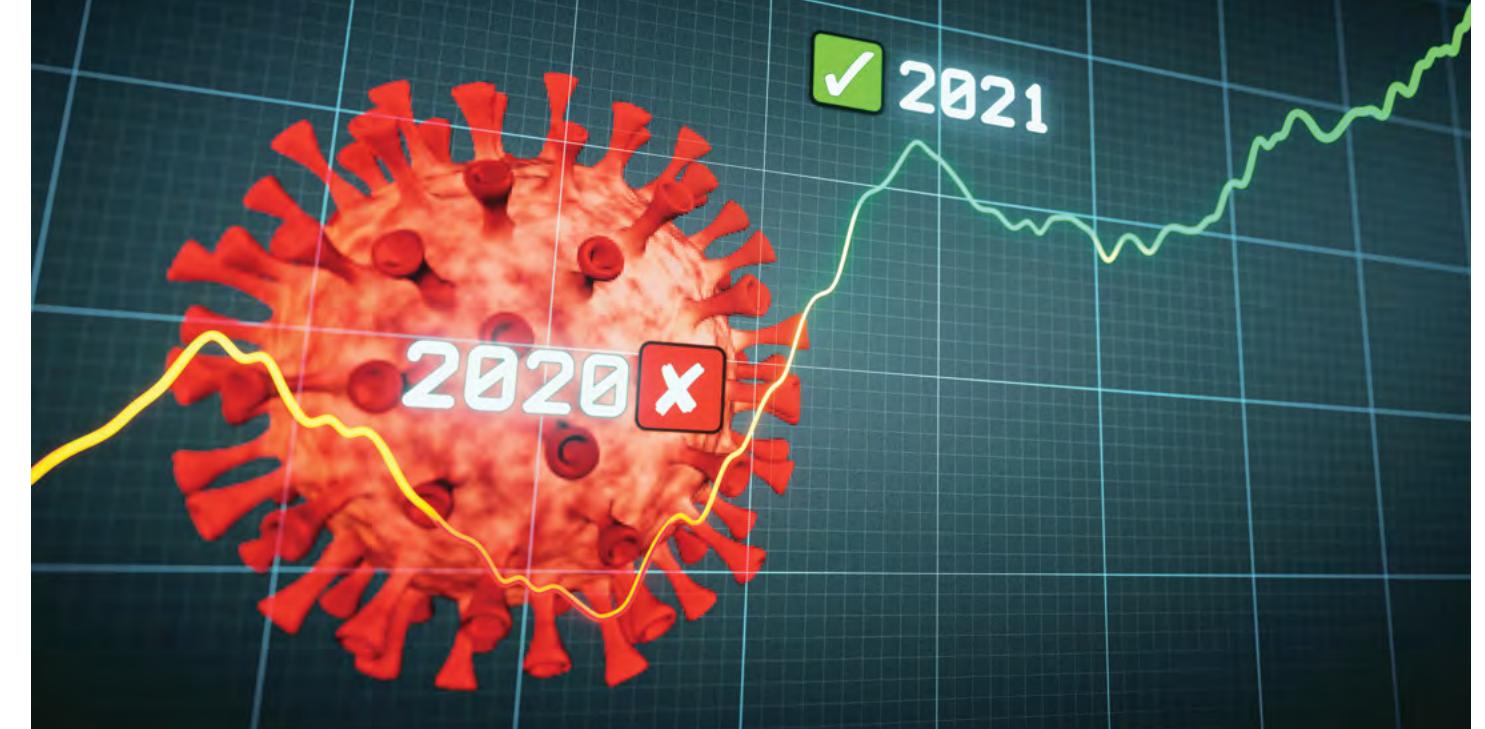
Blame COVID for the number of workers either out due to illness or working remotely and unable to process orders efficiently.

But that is changing, and the channels should be freeing up as the Pfizer and Moderna vaccines reach more Americans.

THE 2020 CONTRACTOR IMPACT

HVAC companies had to make major changes to how they did business as consumer and worker safety within the Pandemic restrictions became the order of the day. High-Performance Contractors had to adapt how they provided continuing education and training to their field service and installation technicians. Early adopters didn't miss a beat.

Even so, unemployment was high toward the end of 2020 and remains so during this first quarter of 2021. Still, ITR Economics' Sadel-Baker concluded that overall, consumer finances are relatively healthy and have been supplemented



with the two stimulus packages issued by the Trump administration. There is an even bigger supplement that could be coming from the in-coming Biden administration.

She adds that consumer spending wasn't nearly as high as pre-pandemic spending because of lockdown measures. That means overall savings in the U.S. today are historically higher than normal and will be available to "feed pent-up demand," which will fuel economic recovery.

OFF TO THE RACES IN 2021

At the midway point of the first quarter of 2021, residential building activity should continue enjoying an upward trend that began several years ago.

So says the December 17th, 2020 U.S. Census Bureau report. It shows privately-owned housing starts in November increased 1.2% above the revised October estimate of 1,528,000 housing units, which is 12.8% above the November 2019 rate.

"As more people work from home, demand for home improvements — including HVACR upgrades — has soared due to the pandemic. IBIS-World (an international industry research firm founded in 1971) expects 1% average growth in this \$47.6 billion (estimated 2020 revenue) industry through 2025," writes Forbes guest

MORE GOOD NEWS

In a recent **Forbes** magazine article, office construction numbers are down, and Forbes attributes that to the fact that the pandemic has forced so many to work from home. The magazine also says that is great news for the HVAC Industry.

Furthermore, according to a recent CNBC report (ncilink.com/CNBCHousing), "The housing market has been a bright spot in the economy despite 25.3 million people being on

unemployment benefits. columnist Peter Cohen in an October 2020 article titled, *3 Ways to Invest in the Future of Air Conditioning* (ncilink.com/ForbesHVACInvest).

Cohen interviewed executives from several key HVAC manufacturing companies. In his interview with Chris Nelson, president of Carrier HVAC, he quotes Nelson saying the pandemic shined a spotlight on the importance of indoor air quality and put it "center-stage."

Nelson told Forbes this bodes well for the HVAC Industry, which was modestly hurt by the shutdowns. He is quoted as saying the HVAC Industry will likely benefit from future growth in IAQ and home renovations.

REPLACEMENT MARKET REMAINS KEY GROWTH DRIVER

All is not about the impact of COVID-19. The HVAC Industry has enjoyed continuous growth in the replacement sector due to aging mechanical system equipment in residential and commercial arenas for decades. Today, advances in technology, connectivity, low or no-interest financing options, and other factors play well for contractors and consum-

ers when it comes to replacing existing equipment that has reached the end of its operational lifespan.

Market research company, The Freedonia Group (ncilink.com/Freedonia2021) sees air conditioning equipment accounting for the largest share of demand, while heating equipment will post tremendous sales growth. They say the largest growth region in the U.S. in 2021 will be in the south.

For Performance-Based Contracting™ firms, this bodes even better in that their focus isn't only on the equipment, but also on the comfort delivery systems.

Last month, I spoke with several performance-based contractors who had positive outlooks on the coming year. They had big-time takeaway

lessons learned during the shutdowns and with changes in how they work with customers (ncilink.com/ICYMI0113).

A STRANGE NEW WORLD

If you go strictly by the numbers, 2021 has enough potential for us to be optimistic. When you add in the additional value that Performance-Based Contractors bring to the table, and the renewed focus on improving indoor air quality, the potential can not only make up for any ground lost last year, but go well beyond that.

As more Americans get inoculated against COVID-19, and the country begins to settle back into more pre-pandemic normalcy, the opportunities will continue to grow. Despite what

the talking heads in the media drum on about doom and gloom, things are looking up, and High-Performance HVAC contractors should approach the new year with that in mind.

From training to how you run your business, to how you interact with customers, close more sales, and increase profits, I believe 2021 will be an excellent year for the HVACR Industry.

So get ready and be optimistic. The indicators are all pointing up. 



Mike Weil is Editor-in-Chief of **High-Performance HVAC Today** magazine as well as director of communications for National Comfort Institute. He has served the HVAC Industry for nearly 40 years in various editorial positions. He can be reached at ncilink.com/ContactMe.

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Here's how the training works:

Certification classes: These online, live classes are provided in 4-hour blocks. For example our Residential Duct System Optimization and Commercial System Performance classes each consist of four, 4-hour segments of training over a two week period. Students who participate in these classes will also qualify for online-proctored NCI certification exams after the training.

Recertification classes: NCI-certified professionals can recertify for two years by participating in these online classes taking place over two consecutive half-days. We currently offer recertification training towards NCI residential and commercial certifications.

In addition NCI is offering several technical and sales non-certification classes.

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Residential System Performance Certification**

March 4-5, 11-12: 8am - 12pm Pacific
16-hour training program

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Explore HVAC Field Performance

February 8: 5pm - 7pm Pacific
2-hour training program

Regular Price: \$95
Student fee: Just \$15 per student

Airflow Testing & Diagnostics*

February 16-17: 1pm - 5pm Pacific
8-hour training program

Regular Price: \$395
Student fee: Just \$50 per student

Duct System Optimization Certification**

March 16-17, 23-24: 8am - 12pm Pacific
16-hour training program

Regular Price: \$690
Student fee: Just \$100 per student

* Qualifies for 8 recertification hours ** NCI Online Certification Exam included

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How to Attract and Retain Good Salespeople

Pictured below is Isaac Heating Home Energy Auditor Steve Bibbens working with one of their residential customers.



The sales team at Isaac Heating and Air conditioning consists of 16 project managers and 15 Home Energy Auditors across six locations. Roughly 14 of those members are outside hires and the rest previously held installation or service positions within the company before their current sales roles.

Being a salesperson at Isaac is a highly coveted position. Some of that stems from the fast-paced high-energy environment of sales. Part has to do with the freedom of their schedule as well as the compensation. More importantly, at Isaac Heating, it's the culture of the group: a true band of brothers and sisters. Here's how we do this.

THE RIGHT FIT

When trying to attract top sales talent, make sure applicants are the right fit. Everyone has potential, but the last thing you want is to put someone in a position where they will struggle. This isn't always easy. We now use *cognitive and placement software* (ncilink.com/HireSoftware) which changes our efforts for the better.

The neat thing about using this type of software is that you can model the scope of what you are looking for around your top performers. When looking for sales talent, it really pays to know what type of person you're looking for. In other words, you need a clear picture of what you want.

For those who have read Jim Collins' book, '*Good to Great*', we adhere to the idea of **First Who, Then What** (ncilink.com/JimCollins). The idea is that our entire team are riders on the company bus, and everyone needs to be matched up with the right seat. That means having the right person in the right job at the right time.

We want our employees to be wildly successful.

Finding people who are the right fit often starts with what attracted them to Isaac Heating in the first place. When interviewing sales applicants, I often hear that our brand is what grabbed their attention.

They tell me that our long history (75 years), being one of the biggest HVAC contracting firms in the area, and being a family-owned business are impressive to them.

Grooming a sales rep from within the organization is something we have



Isaac Heating Project Manager Ben Walton goes over options with a homeowner.

done for ages. Most of our top sales performers are former service and installation techs — me included. This approach is well-received by our clients because it lends credibility to our professionalism and establishes a level of trust.

THE ISAAC APPROACH

At Isaac, we have two sales roles. First are our **Project Managers** (PM). These are our "sales reps," though they are responsible for so much more than just collecting contracts from clients. A Project Manager oversees the entire sales process, from initial consultation to the completion of a project.

Then we have our **Home Performance Auditors**. Their primary responsibility is to evaluate the home from a health and safety, comfort, and energy consumption standpoint and make the appropriate recommendations. When these recommendations turn into jobs, our auditors then take on the PM role.

Auditors undergo training and continuing education on the company's approach to home performance using both internal and external training resources. As a result, our team understands we don't just swap

out equipment.

At the end of the day, we sell unfinished products that require installation. So much of the customer-value lies in the experience of the company doing the installation. Training helps add to that experience level and it also helps with technician retention.

As a tech, learning something new every day has a direct impact on how well they perform. From my perspective, that's an environment where people can thrive.

One of the ways Isaac Heating actively works to curb technician turnover is through a high level of engagement.

The COVID pandemic has presented some unique challenges to this concept, the biggest of which is limiting regular face-to-face meetings.

I don't get to physically see my team. But we still have regularly scheduled virtual team huddles (ncilink.com/VirtualTraining).

Along with this kind of engagement, you must remove barriers to make the sales process as easy to follow as possible. This also works for creating a better client experience.

VALUE AND CULTURE

In our sales process, we focus on building value, not cost. I see that as a parallel to retention and pay. When bringing on a new rep, the real focus should be on creating a bond with them. They will learn pricing, proper design, and product knowledge, but you have to make them a part of the family.

While money can be a motivator, it cannot overcome things like poor culture or poor leadership. What you'll find is a temporary shot of adrenaline and then it fades.

Sales representatives need to have a sense of gratification and clear rewards for goals achieved. The last thing you want is for a rep to be worried about their pay.

Culture includes community service. We often give back to our community by offering our time and expertise. It is through things like a charitable installation or fundraising auction that you see internal bonds being cultivated and relationships strengthened. This part of our culture helps to strengthen our employee retention.

IN OUR SALES PROCESS, WE FOCUS ON BUILDING VALUE, NOT COST. I SEE THAT AS A PARALLEL TO RETENTION AND PAY.

Salespeople will always be driven by representing the best product. Again, furnaces and air conditioners by themselves are largely unfinished products. Designing and connecting them to solid ventilation systems makes the difference.

We spend an exceptional amount of time developing and educating our team. We place a heavy emphasis on

designing a system properly. This allows our sales reps to have the utmost confidence in the product/company they represent.

SIX FACTORS FOR ATTRACTING AND KEEPING TOP SALES TALENT

When you break it down, attracting and retaining top sales talent requires the following key steps.

■ **Understand who your top performers are** and describe the key characteristics that make them successful. Then look for similar characteristics in potential candidates

■ **Groom people from within your organization** for sales positions. They have a unique perspective on the client experience

■ **Cultivate a family-type atmo-**

sphere. Find ways to bond with your salespeople that don't pertain to work

■ **Use monetary incentives strategically.** Don't just throw cash at the group and watch them all fight for it. Goals should be clearly outlined. There should be individual as well as team goals. Make sure to celebrate wins with frequency and consistency

■ **Engage the team through special projects** that either help to improve the client experience, or even the internal sales process itself. This can turn into career progression and identify leaders among the group

■ **Share direct and concise communication** via email or meetings. Salespeople tend to have short attention spans, so the communication needs to be engaging and short.

At Isaac Heating, these are the things we do to attract and retain solid salespeople. This approach also works to build on our culture, to live up to our standards, and to continue our mission to be THE company that is easiest to work with. 



Andrew Torres brings more than 16 years of HVAC sales, installation and leadership experience to the Isaac Heating team. He joined the company when he was 19 years old as an installation helper. He has held roles as a NATE-certified installer, BPI-certified Home Performance auditor, residential project manager, and a branch manager. His goal is for his team to cultivate an unmatched experience for Isaac's clients by simply being easy to do business with and attentive to clients' needs. He can be reached at ncilink.com/ContactMe.



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Translate Test Data into Solutions Your Customers Seek

“ **S**on, I don't understand a word you just said,” uttered the chicken farmer to [Napoleon Dynamite](#). Perhaps you haven't heard

these exact words from your customers, but you've probably seen it on some of their faces.

Let's take a look at an essential element in system diagnostics that is not technical but critical – translating test data into ideas your customers can easily understand and act upon.

To successfully offer HVAC system solutions takes much more than technical ability alone. It requires you to become a translator, a good listener, and a teacher.

While you may think these are lofty skills, you'll be surprised how naturally you can develop them. With some practice, you can translate test data into solutions your customers understand and want.

WHAT, NO SALES SKILLS REQUIRED?

If you're like most service technicians, you don't like to sell or be sold. So, how can you offer pricey system solutions if you don't follow the traditional high-pressure sales route?

Think about how **YOU** buy today. You probably jump online and search for information about what you want to buy. Once you've gathered enough information and are confident you've found what you want, you buy it.

Do Amazon salespeople hound you to buy something? No, they have intelligent search engines leading you to ever more information about products in which you're interested.

You're well trained to “click” and learn until you decide what the best product and deal is for you. A couple more clicks, and it shows up on your front door in a day or two.

PEOPLE LEARN, DECIDE, AND CLICK TO BUY

What if your role in a customer's buying decision mirrored their online learning pattern, decision-making, and buying?

Although it sounds new, this process is timeless. It's how people have always preferred to make purchases. Unfortunately, most technicians don't pull together the knowledge, skills, and



desire to offer more than the lowest price solution that may or may not solve the problem.

While you're in a customer's home, you can duplicate the learning and buying pattern they already use online. Instead of clicking online for more in-depth knowledge, you become their source for deeper understanding. You gather the information they need through testing and diagnostics and then translate your findings to them in a way they understand. You can even teach them with live hands-on experience.

Your technicians should be able to “translate” diagnostic information into everyday language that any customer can easily understand.

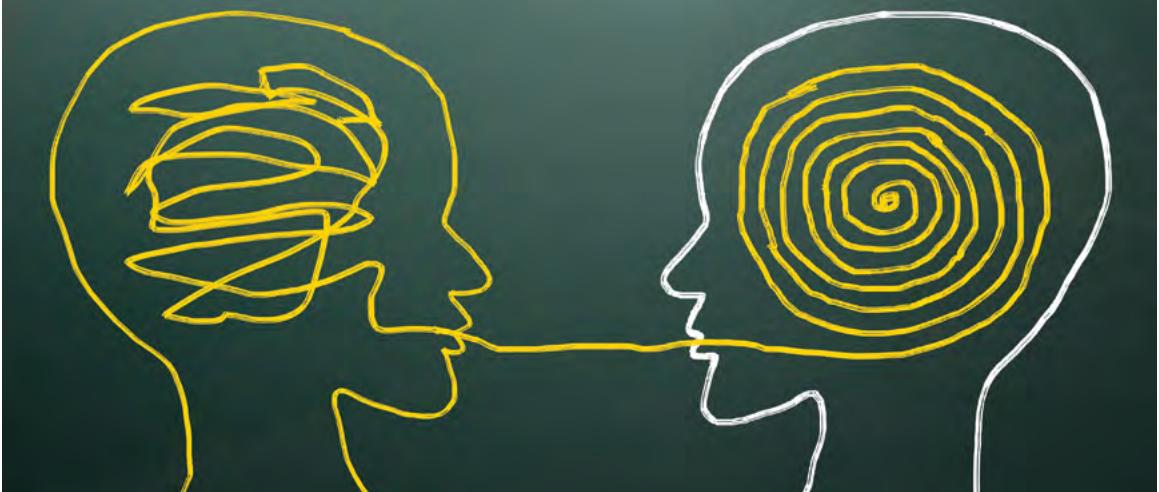
TESTING IS YOUR "RESEARCH"

Some customers ask why testing is needed when others don't test. The answer is simple:

Testing is the only way to get the information necessary to discover the solution to their problem.

When you communicate essential test results in a simple, honest, straightforward, and easy to understand language, each piece of information helps customers discover what they want. When the time is right for them, they'll "click" (approve the sales agreement) and buy.

Your ability to translate is essential. Field testing and diagnostics provide very persuasive information, but it arrives in a language most customers don't understand. Out of respect for them, you must become a translator.



Listen carefully to responses from your customers to make sure they received your message.

Stop high-pressure selling and give customers the information they need to make their own informed decision. Some decide immediately. Others need more evidence before they are sure of what they want. Be patient. There is never a need to force the sale. Forcing is the opposite of teaching.

When searching Amazon, the nor-

mal flow of information begins with a very brief description of the product, accompanied by several pictures. If more information is wanted, you click on ratings and customer reviews. Then, for a really deep dive, you can click on product specifications. When you're satisfied, you decide to buy.

TRANSLATE TEST DATA FOR YOUR CUSTOMERS

In the field with your customers, you are their living source of information. Online they can click on another product in an instant if it's

don't understand. Out of respect for them, you must become a translator.

Unless you're able to communicate in simple terms, they'll click over to your competitor's product, even though you may be the only one able to offer the solution they seek.

THREE FIELD TRANSLATION EXAMPLES

To help others, you can translate measured CFM into something common like beach balls of air per minute. Translate Inches of Water Column into a blood pressure equivalent, and Btu's

to a reduction in miles per gallon.

Your job is to translate the highly technical HVAC mumbo-jumbo into simple ideas and solutions your customers want right now.

The basic translation guidelines are:

1. Translate the description of the value you tested (such as pressure) into a comparable value they know something about and can easily understand (such as blood pressure)

2. Compare the measured test number to the required number. Without that comparison, there is no reference point on which to base a decision.

3. Calculate the percentage of what you measured compared to what is required. You calculate this percentage by dividing the measured value by the required value.

CFM (Cubic Feet per Minute) or the required airflow volume is un-



derstood by all HVAC techs. But to the public, it means nothing.

Common translations of this test value that most customers will understand include:

"This room needs 120 buckets of air every minute to be comfortable, and right now, the room is only getting 38 buckets per minute. Or 32% of what it needs."

Or "Your heating system should move the equivalent of 1050 beach balls of air per minute to deliver all its heat into your home, and we measured only 522 beach balls. That's 50% or half of what the furnace manufacturer specifies."

Inches of Water Column is the standard unit of air pressure measurement in our industry. Rarely will you find a customer contemplating the pressure in their HVAC system before you make them aware of it. So, explain this one very carefully.

Each piece of air-moving equipment is rated for a maximum operating air pressure, .50-in. WC is the most typical rating. Perhaps you measured pressure at .82-in. WC.

You can translate by saying some-

Baker
Curbside Express
 Load and Go

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thing like, "Your cooling system's air pressure is rated at a maximum of 50, and we measured its pressure at 82. That equals a blood pressure of 180 over 100, or Hypertension Stage 3. If you were in the hospital, you wouldn't be leaving that day."

British Thermal Unit (Btu) is a measurement of heat. As with all these initials, don't use them with a customer. Try using simple whole numbers to describe the amount of rated or measured heating or cooling in a system.

The best way to translate Btu is to compare it to the system's reduction in Gallons Per Minute. Any customer would take action if their car GPM were reduced by 60%.

Plot airflow and measure temperature change to calculate delivered Btu.

Then divide by rated Btu to find the system's percent of GPM loss.

You could explain it something like this: "Your air conditioning system is rated at 36,000. We measured the delivered cooling and found it's only 14,300. Your system's GPM is only 40% of what it should be."

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It should be clear to your customer that you're very different from your competition. Regardless of the level at which they choose to participate, they

care about the information your diagnostics produce because that data is essential to their buying decisions.

When you test, diagnose, and translate solutions for your customers, you help build trust and become the qualified person they'll choose to provide the answer. 



Rob "Doc" Falke serves the industry as president of National Comfort Institute, Inc., an HVAC-based training company and membership organization. If you're an HVAC professional interested in a free table to convert static pressure to blood pressure, contact Doc at ncilink.com>ContactMe or call him at 800-633-7058. Go to NCI's website at nationalcomfortinstitute.com for free information, articles, downloads, and current training opportunities.

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The Flue is TOO Big?

Commercial buildings like the one pictured here have been in use for more than 80 years and have had little to no impact on venting or condensation. So why are they the target of such concern today?

Based on the current AHRI (formerly GAMA) venting tables, the flue shown here is not considered acceptable. Well, without knowing the exact size of the flue and the Btus of the equipment venting into it, this would be more of an opinion than a fact.

So why do some believe this flue is unacceptable? Because it is on an outside wall, has four sides exposed to the weather above the roof, and can't warm up properly. However, it is close to 80-years-old and has been working fine.

After reading the original ASHRAE engineer-

ing manuals, the flue size and height were typical for large buildings, especially those with flat roofs. The purpose of the extended height was to minimize wind effects that could cause flue gases to recirculate back into the building.

If you drive around most towns and keep your eyes open, you will see many old buildings with massive flues, some even bigger than this one, that never had a problem.

- So why are flues now getting blamed for equipment not operating or venting correctly?
- Why do Code Officials and manufacturers say these flues are too big?
- Why are Code Officials making contractors install flue liners and making flues smaller?

CONDENSATION ISSUES?

One of the reasons mentioned for adding flue liners and making flues smaller is that higher efficiency equipment flue temperatures are lower today and don't heat the flue adequately enough. This causes condensation.

Having measured thousands of flue temperatures on residential and commercial gas-fired equipment during the course of my career, there is little difference in flue temperatures today if the equipment is operating correctly. The exception would be condensing equipment that does not vent into standard flues.

TIGHT BUILDINGS?

Another reason stated for modifying flues like this is buildings are much tighter today and are removing too much air.

I am not even sure how tight buildings have

anything to do with flues. Tight buildings are a combustion air and ventilation problem, not a flue problem. If the equipment isn't venting properly (assuming the flue is open), the problem is combustion air.

A flue is an inanimate object that does nothing but provide a path for hot combustion gases to flow from the inlet to the outlet. Much like the return duct on a furnace or the return piping on a boiler, an external force needs to be applied to create this flow.

In the case of venting, this force is draft. Draft is created by the pressure difference of indoors versus outdoors and the temperature difference of the flue gases versus outdoor temperature.

To maximize this flow, ducts and pipes are sized to create the least amount of resistance.

In the case of larger flues, they create less resistance, less contact of the gases with the flue surface, and this minimizes the possibility of heat transfer from the flue gases to the flue.

By keeping flue gases hotter, condensation should not be an issue.

I am not recommending oversized flues as the best choice. I am recommending we understand that making flues smaller rarely fixes a venting problem.

HEATED FLUES?

I do not know who started the rumor that flues need to be heated or are too big. If that were the case,

the flue pictured in this article would never work.

The rumor most likely started in the 1980s when the first induced draft equipment was introduced. Rather than blaming equipment operation for condensation in the flue, the flue itself was blamed.

New venting tables were developed by **Battelle Institute** and what used to be known as **GAMA** (AHRI today), using a computer program to address this problem. This solved very little and tended to be more of a bandage than a fix.

Flues are not heat exchangers. If the flue is absorbing heat from flue gases, chances for condensation to occur greatly increase. This is why National Comfort Institute (NCI), spends a lot of time discussing venting and the function of a flue.

SO WHAT DOES A FLUE ACTUALLY DO?

A question rarely answered correctly by new students is, "What is the function of a flue?"

The most common wrong answer is to vent the flue gases. However, venting flue gases is the function of draft. The function of a flue is to communicate or connect inside pressure and temperature with outside pressure and temperature.

The next time you hear someone say they are having a problem because the flue is too big, someone is making a bad diagnosis. The equipment or the building is at fault, not the flue! 



Jim Davis is the senior instructor for National Comfort Institute (NCI). He has a long and storied career in the HVAC Industry. That career began back in 1971. Today he is considered one of the HVAC Industry's foremost authorities on combustion and carbon monoxide safety. Jim is credited with developing the first combustion testing protocols and field diagnostic methodologies using digital combustion analyzers. To contact him, go to

We'd Like YOU to Write for HVAC Today!

The team at **High-Performance HVAC Today** magazine is always on the lookout for Performance-Based Contractors who want to write and contribute articles.

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So what do we need? The magazine focuses on how contractors are implementing and using the performance-based method in their processes, both internal and external – success stories, challenges, case studies, and so on. You are the experts.

Some typical topical ideas include:

▼ **Tools:** This can be a 250-word review of something you use to test static pressures, measure airflow, temperature, and heat in residential and commercial HVAC systems.

▼ **Processes:** What strategies do you have in place for your techs in the field and/or your office personnel to manage everything from recording field measurements to tracking High-Performance training, objectives, and so on?

▼ **Sales:** How is Performance-Based Contracting™ impacting your sales?

▼ **Business/Marketing:** How do you incorporate testing, measuring, and

diagnostics into your service agreements? How do you use social media for marketing your High-Performance Contracting services? How do you explain test results to customers? And so on.

▼ **Technical:** How do you train/certify your field service and installation team?

We understand you are busy. That is OK. We can help make it as easy and painless as possible.

If this is interesting to you, simply go to the following URL: hvactoday.com/contribute. Fill out the very brief form there, and we will contact you to get the ball rolling.

If you have any questions, please reach out to Editor-in-Chief Mike Weil at

February 2021 PowerPack is Here

The PowerPack is designed exclusively for National Comfort Institute (NCI) members and includes access to some of NCI's recorded webinars, online training, and downloads.

Be sure to share them with your team during the month of February.

We think you'll find these tools and training materials very helpful as you continue to grow your High-Performance HVAC business.

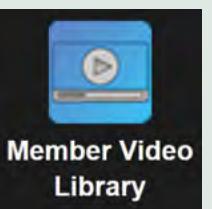
So without further ado, take a peek at the February 2021 offering:

- ✓ **Static Pressure Test Diagram** (Download)

- ✓ **Cooling Test-in Report** (Download)
- ✓ **Fundamentals of Fan Airflow** (Online Training)
- ✓ **Value and Comfort Pre-Season Performance Air Conditioning Tune-up Flyer** (Download).

Just go to ncilink.com/PwrPak to access it today. If you have any questions or are unable to access any of the tools in this program, please contact us at 800-633-7058.

Introducing NCI's New Video Library



NCI members now have a new benefit that can help them teach field technicians some of the Performance-Based testing and diagnostics techniques they need to be successful.

These short videos are taught by NCI Trainers. Among the videos currently available are:

- ▼ **Diagnose Dirty and Undersized Filters in Less than 2 Minutes** (with David Richardson)
- ▼ **How to Measure the Total External Static Pressure of a Gas Furnace** (with David Richardson)
- ▼ **How to Perform a ComfortMaxx™ Air Test** (step-by-step procedure).

The library will be updated regularly with new videos taught by other trainers. This library is available to you as part of your membership.

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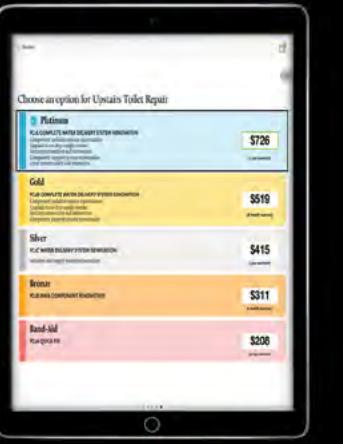
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Dominick Guarino
is publisher of
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He can be reached at
[**O**ver the years we've had the privilege of talking to thousands of HVAC contractors across North America about how they've fared in implementing the High-Performance approach in their companies.](http://ncilink.com>Contact Me</p>
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I wish I could say the vast majority was able to just flip a switch and *presto chango* they were magically transformed with High-Performance Contracting at the core of their culture. Nothing could be further from the truth.

A consistent thread through many of our conversations was just how difficult it was to get this new culture to stick. While the reasons varied, the most prevalent was the lack of a solid plan and follow-through. Many said they were overwhelmed and couldn't figure out how to easily implement this approach within their organizations.

In other words, they didn't know which initial steps they should take so they wouldn't have to try to eat the elephant in one bite. As we look at the companies that have successfully made High-Performance Contracting a seamless part of who they are, we recognized some common steps they took, and in what sequence.

If you're struggling with implementation, here are six baby steps that can get you back on track. If you're just starting out, these steps will help put you on the right path from the beginning:

STEP 1: Get every service tech, salesperson, and installer on your team to measure static pressures and interpret airflow at the equipment. Doing this should be part of every service call, sales call, and installation. It is a foundational step. To get everyone on board, you must help them understand why the company is doing this. You need to explain in simple terms why airflow and performance are so important, and how they impact your customers.

Your goal should be testing 100% of the systems your team touches. It might take a little time to get there, but it's not as difficult as it sounds. Testing and documenting require discipline, ongoing training, and a lot of positive reinforcement.

STEP 2: Teach your installers how to perform Air Upgrades and System Renovations. Make sure they understand what's expected of them and they have the tools, training, and materials to do the repairs and test-out properly.

STEP 3: Train your salespeople to follow-up on testing-generated leads. Make sure they have the right tools to perform testing on all sales calls. Remember, they are your *technical translators*. They must know how to explain to homeowners in laymen's terms how they can improve their homes' comfort, safety, and energy efficiency.

STEP 4: Establish menu pricing for your salespeople to easily add Air Upgrades and System Renovations to their proposals. This step can be done concurrently with Step 3.

STEP 5: Build and stock Air Upgrade kits so they are ready to load on your installers' trucks so they can perform these basic upgrades.

STEP 6: Market your capabilities to both existing and potential customers. Use third-party credibility materials like National Comfort Institute's (NCI) Home Comfort Reports series. Put this information on your website and social media. You will be surprised how many people are looking for what you have to offer.

There is more to it of course, but these first six steps will take you in the right direction. Once you've mastered them, you can move onto new levels of delivered performance.

The key is reinforcement. You need someone to champion this approach throughout your company. If you are the owner or general manager, preferably it's you. If you don't have the time, delegate it to someone in your company who is truly passionate about delivering High Performance.

One more tip: Join a group of contractors who meet on a regular basis to keep their High-Performance fire burning brightly. One such group is National Comfort Institute's [Trailblazer Coaching program](#). You can include your key staff on these monthly coaching calls as well.



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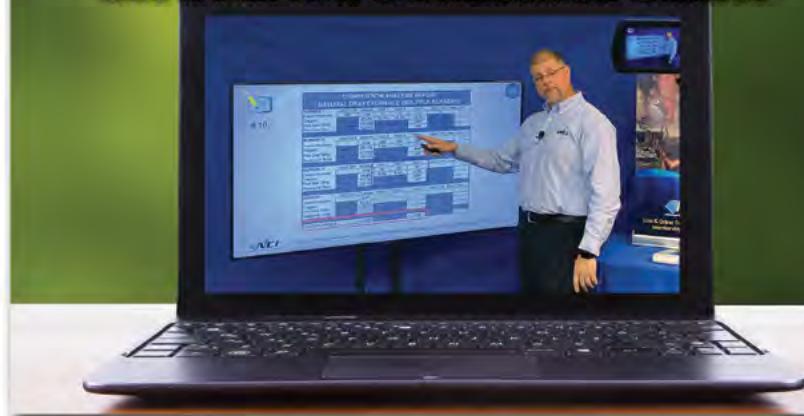
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