GRAND THEFT

HOME BUILDING

SOMEONE IS STEALING FROM YOUR BUSINESS, ERODING YOUR MARGINS, AND BEATING UP YOUR BOTTOM LINE. BEWARE: BANDITS REMAIN AT LARGE.
Imagine ... your outside auditor calls to tell you someone, somehow, stole more than $10,000 per unit from your building company last year. But they have not yet fingered the thief, because the losses came from more than one hundred different accounts. Stop ... think ... what would you do? Is there any chance you would put this off until next year? Next quarter? Next month? Tomorrow? You know the answer, yet these losses occur daily in virtually every home builder in the U.S. and Canada – including yours. That’s an incredibly bold claim which we could not make – if we did not have the cold, hard data from more than 150 builders of all sizes and types to back it up. Right here, right now, you must decide. Will you confidently proclaim this could not possibly be happening to you and move on, just doing what you’ve always done? Or will you open your mind, learn to “see with new eyes,” find these thieves of profit in your own company and remove them forever?

This article series reveals where these losses originate and why you currently miss them. Although this is not an exhaustive list we cover some of the most prevalent and costly sources. The first article is a vivid intro to the concept and includes a variety of examples. Articles two through five, focus specifically on variance, the top source of loss for so many builders. Whether you call it VPO, FPO, EPO or simply an “extra,” somewhere there is loss. It may fall to the supplier, the trade, the customer, the builder, or any combination. Variance depletes your margins, exhausts your staff, frustrates your suppliers & trades and bewilders your customers. Yet few builders measure the right things and those who do, typically measure them incorrectly. The old adage, “You cannot manage what you cannot measure” has never applied more perfectly – or painfully. In fact, the single largest cost factor regarding variance, resulting in more than half the total loss, is virtually never calculated or accounted for. How can that be?

This is a massive obstacle. We have yet to find a single home builder that measures variance fully or correctly. So, you believe you do? We challenge you to read this booklet, then decide. Could it be even that sub-1% variance you claim is not quite accurate? Bet on it. This series reveals the secrets of variance measurement, steps required to slash variance, and the most important cost factor of all that no one measures. A huge improvement in business operations awaits – and most of your competitors aren’t smart enough to see it nor have the the will to fix it. That can be very good news for your firm and will push you far down the road toward both increasing margins and becoming “the builder of choice” for suppliers & trades. The series wraps up with a column on another profit killer – “lazy engineering.”

1. Grand Theft Homebuilding Someone is stealing from you – will you look the other way?
2. VPO Story Welcome to your nightmare (VPO article 1/4)
3. The Variance Measurement Quagmire The nightmare continues (VPO article 2/4)
4. What Lies Beneath The sinking of a home builder (VPO article 3/4)
5. The VPO Cure A step-by-step guide (VPO article 4/4)
6. The Lazy Engineer: Wanted: a new job description for an old profession

Using this Booklet
Distribute this series to your team, read the articles and facilitate open and frank discussions in a safe environment. Whether you learn something new, confirm lessons from long ago, or even disagree, you are guaranteed to stimulate spirited and productive debate.

About TrueNorth
TrueNorth Development was founded in 1997 to provide consulting and training to homebuilders worldwide. Our five consultant/facilitators have worked with more than 250 builders in the United States, Canada, Australia, New Zealand and Mexico, helping builders produce better homes at lower cost with the highest levels of customer satisfaction. TrueNorth provides a wide variety of services from strategic and operations improvement planning to field training and is the acknowledged leader in the implementation of Lean process & methods in the building industry. Since we launched TrueNorth Lean in 2007 our client builders have identified more than $250 million in savings. We also currently have more than 20 specific training courses for all types of homebuilder personnel.

This series is based on articles published by TrueNorth President Scott Sedam in Professional Builder Magazine, ProBuilder.com and HousingZone.com. The series is reprinted with permission. It may be copied and distributed in its original form with all credits intact. For an electronic link to the PDF of this entire booklet, send your request to info@truen.com with “Nightmare Called Variance” in the subject line or call 248.446.1275. Bound, full-color, printed copies are available for a nominal charge. Learn more about us at www.TrueN.com and please join the LeanBuilding Group on www.LinkedIn.com.
GRAND THEFT

SOMEONE IS STEALING FROM YOUR BUSINESS, ERODING YOUR MARGINS, AND BEATING UP YOUR BOTTOM LINE. BEWARE: BANDITS REMAIN AT LARGE
Imagine you’ve just been called downtown for a private meeting with your auditors. They’ve requested you come alone because they have something serious and highly confidential to discuss. Your day is now officially a disaster. “Can’t you just tell me over the phone?” you ask. The reply is an emphatic no; the news must be delivered in person in private. Two hours after arriving at the auditors’ office, you pull out of their driveway, still in shock over what you’ve just been told, one whiff of bus fumes short of nausea. Thoughts bang around in your head like in a pinball machine, bouncing from confusion to denial to anger then panic and finally settling in at despair. “How could this possibly happen on my watch?” you lament as you sit at a traffic light, staring yourself down in the rearview mirror. But you’re a survivor, and at some point as your car climbs the freeway ramp, the old drive kicks in again. A few miles later and you’re full-on engaged and proclaim aloud, “We’ll get to the bottom of this. Today!”

As you speed down the highway, disregarding most traffic laws, you tell the voice-call system in the Silverado to call Sherry in the office. She answers and you instruct her to have the entire senior management team assemble in your office at 2 p.m. sharp for a mandatory meeting. Sherry starts to explain why that will be difficult for one manager and that another is 20 miles away and … you cut her off. “Mandatory!” you tell her, this time more emphatically, “No exceptions, no excuses.”

One by one the team members arrive, some visibly annoyed at the sudden, unscheduled meeting. But their chatter dissipates as they settle in, later noting they’ve never seen that look on your face before. Forgoing small talk, you get right down to it. “I asked you all here today because our auditors called me in for an emergency meeting this morning. I have disturbing news. Someone is stealing from us. Big time. And it’s been going on for years.” An audible gasp fills the room, then a pall of disbelief falls over the team. You continue, “They aren’t sure yet who’s behind it, how much we’re losing, or just how the thief is pulling it off, but it goes way back and it’s been happening right under our noses. They believe the theft is at least $5,000 per unit. And what’s more, the losses seem to come out of every single department. We’re averaging about 10 closings per month now. That’s right, we’re talking about $50K a month! The total loss last year exceeded $500K, and this year we’re looking at $600K or more—unless we find the perpetrator and stop it. This is hard to believe, I know, but we went over the numbers 10 times or more and the loss is real. The auditors suggest we immediately hire a private investigator, but before we take that step, I think there’s a fair chance we can solve this right here, right now. So tell me,” you slowly and deliberately scan the room, stopping to look each team member in the eye, “who’s the thief?”

THE CONTINUANCE

What will your people say? Who will they suspect? How will they respond when you ask them how to proceed? Remember, this is a real number. The auditors have absolutely determined that someone, or some group, is bleeding off $5K per unit from you—every month. Before you read on, consider what you’d do if this really happened in your operation. If it were true, how long would you wait before launching a full-scale investigation? A quarter? A month? A week? I’m betting the overwhelming majority of presidents, CEOs, and owners would say, “The investigation begins now, this very day, and we won’t cease until we find our thief.” Hardly anything else would get done.

So how would you react if your sales and marketing VP said, “Sounds awful Mike, but you know we have four new communities this quarter with three model openings in each, we have to get the collateral materials ready, and I have to hire two new salespeople. Can’t this theft thing wait until the third quarter?” You’re about to choke on your coffee when your director
of construction chimes in, "Hey, she's right. We're nearly doubling our normal rate of starts next quarter and I'm already short two superintendents, and the trade shortage is kicking our butts! I'm thinking maybe fourth quarter we look at this?" By this point you're in total disbelief, trying to choose your words carefully, when the head of purchasing speaks up, "Well, I don't know who's stealing what Mike, but it's damn sure not in my department. I'd know. I'm trying to get start packages out for those new projects, then bid packages for the next five, and you already pulled two projects forward by six weeks. Our supers are screaming about the poor quality of trades we're throwing out there and sales is out of control with its 'custom options to make the sale' routine, and I'm short a guy, too! Let's just push this theft issue back until after year-end when we'll have time to do it right." You're beyond stunned now and meanwhile, your head of finance/accounting sits there shaking her head, muttering, "No way, Mike. Just no way anyone is stealing that much from us. We need a new auditor before we do anything else on this. Those people are nuts."

After some spirited discussion, you return to your office, when the auditor calls with the name of a top-notch private investigator, a CPA and former IRS agent who specializes in internal business theft. With only slight hesitation you tell him, "Jack, we just can't tackle the theft problem now. My people are all swamped." The auditor is dumbfounded. "Hey Mike, wake up! Someone is stealing more than half a million a year from you. That's first-degree grand theft in this state. Twenty years in the big house. You ignore this for even a month and the bank and your investors will start suspecting you!" You pause, thinking it through, recalling the protests of each of your senior staff members and decide there is nothing you can do. "Call me in January, Jack. Maybe after year-end we'll have time to catch the thief. Meanwhile, my margins are down and it's all hands on deck to deal with that problem." (After the margin comment and the click of the phone hanging up, Jack nearly falls off his chair.)

Five thousand dollars per unit? That's just a start. We've watched teams uncover $10K to $15K losses on average homes, and as much as $20K to $25K on thoroughly bloated, blinged-out higher-price homes. And that's just "round one." Then there are the losses in land development, driving up finished lot costs by thousands, even tens of thousands, and losses in process, such as the build schedule, which can drain away similar amounts. And we haven't even touched the losses in overhead categories. Would you suspect that some lurk there?

And all of it—every last cent—is nothing but theft of what by rights should be yours. No one comes in with a gun and holds you up, and you're not the victim of a Russian hacking scheme transferring money from your accounts in Chicago to theirs in Chechnya. No, this money leaves with your specific approval, via payments signed off and duly recorded in the books. It exits your office through your legitimate channels in a variety of categories, masked under the heading, "Business as Usual." The money goes to materials, labor, product, and process that are—or at least should be—unnecessary. And all of it is preventable. Let's take just one example, which to many may sound boring: foundations. Yet the TrueNorth team has been amazed by how many ways people come up with to waste significant dollars on what, on the surface, seems to be a simple process. A few examples:

- Wisconsin: "Boil out" resulting from poor form-board installation. Average concrete waste of 2 yards; $300 per unit, with labor.
- North Carolina: Excavator uses oversize bucket resulting in oversize footers; 3 yards average; $350 per unit.
• Michigan: Four yards of excess concrete in basement foundations due to “lazy engineering”; $400 per unit.
• Alberta, Canada: Grade-beams grossly oversized; $550 per unit.
• North Texas: Overdesign puts extra cable in a third of the beams and another third are specified too deep; $650 per unit.
• South Texas: Sloppy trenching for post-tension slabs, locally known as digging “muffins vs. brownies”; 8 yards; $900 per unit.
• Oklahoma: Switch from stick-built roofs to trusses. No one removes interior-grade beams; $1,000 per unit for material and labor.
• Illinois: Wrong materials for backfill of basement walls; 20 percent of homes leak, averaging $1,200 per unit to fix.

• Colorado: Switching to new soils-test firm; multiple total failures; cost exceeds $12 million.

I could go on, of course, giving you a hundred examples of loss on foundation alone and every other element in home building, internal or external. But stop here and visualize the process. In each of these cases, the builder “writes a check” for material or labor by a trade, a supplier, a service provider, such as an engineer, or internal overhead for admin and management. That check is either larger than it should be, or it should never have been written at all because in every instance the loss—the theft of your margin—is preventable. Our work in nearly 200 Lean Process implementations over more than 10 years has yielded literally tens of thousands of examples in every aspect of the business, from the foundation to the design center, from the accounting department to land development. Absolutely no one is immune. Virtually everyone reading this could be locked up for Grand Theft Home Building in the first degree.

GET OUT OF JAIL FREE?
Is Grand Theft too strong a term to describe what’s happening out there, all the money bleeding right out the back door of your office? When we simply call it loss, it doesn’t fire up the stomach acid or make the blood boil. The result is builders continually push back getting truly serious about recovering these losses. If we call it theft, however, stealing your margin, siphoning money from your bank account ... well, that provokes a more visceral reaction. It makes you angry. It makes you commit to leaving no stone unturned to find these thieves of profit and banish them forever. That’s the reaction we need. The dollar amounts we’re talking about far exceed the minimum requirements for grand theft in the first degree in all 50 states. The official position on grand theft by the law, however, is that it requires “intent.” Do I think anyone in this business sets out each day having made the conscious decision, with full intent, to bleed off profit margin? Of course not. We’re not talking about embezzlement here, and yes that happens, though it’s rare. But at what point does willful inaction begin to approach mindful intent? I suggest you walk a fine line when you know the loss is there, you know there are ways to stop it, but at best you keep putting it off and, at worst, you ignore it or just pretend it isn’t happening. Are you now anything more than an accomplice to the crime?

There are so many issues fighting for your attention, and thus it takes a lot—perhaps even something dramatic—to get you to focus on any one of them. So, let’s just call this what it is and be brutally honest. Are the margin bandits still at large in your company? My sincere suggestion is that this month, no, this week, you form your “Grand Theft Home Building” team and resolve to find exactly what it is in your product and process that’s stealing your profit. Identify the bandits, measure them, study them, and take specific, intensely targeted steps to eradicate them from your firm forever. Committing to that level of positive intent may just keep you on the right side of the law—unless, of course, you choose to put it off again.

Next month, we’ll tackle one of the biggest margin bandits of all, the VPO. PB

Scott Sedam is president of TrueNorth Development, a consulting and training firm that works with builders to improve product, process, and profits. For a free PDF of Grand Theft—Home Building, including a copy of this article and 12 additional supporting columns on finding the lost profit in home building, email info@truen.com. You may reach Scott at scott@truen.com or 248.446.1275.
VPO STORY
WELCOME TO YOUR NIGHTMARE

Each variance purchase order is a failure, for everyone. It’s lose, lose, lose—for the builder, the supplier or trade, and for the customer.
During one of our recent LeanWeek implementations with a builder (let’s call the company Exceptional Homes), it was the mason’s turn to present ideas for reducing waste in product and process. Carlos, the owner, had some impressive solutions. One was to remove the 10 hidden courses of brick underneath the full-length front porches on several of the builder’s models that were recently redesigned from plain-Jane to Craftsman style. Jose, the lead man Carlos had brought with him, exclaimed, “¡No puede verlo!” which translates to: “You can’t see it!” Simple. Done. Total value exceeding $300 per unit (a bit more than one cube of brick plus labor). Everyone shook their heads wondering in disbelief how on earth they’d missed this.

There were other great insights, including eliminating a pricey lintel and removing brick ledge from walls showing no brick. Then, with about 10 minutes to go, Carlos said he had one more small item to discuss regarding missing block, brick, and stone on this builder’s high-style homes. Exceptional Homes had a wide variety of plans with the typical three or four elevations for each. Employees, suppliers, and trades alike complained how plans changed on a whim—often before anyone got really good at building them. Sometimes the house was just missing a standard type of material, but often it was a specialty item needed for an elevation or an option, be it standard or custom. Carlos valued this as 15 minutes of time to make the call, worth about $15, and probably the same for the Exceptional Homes’ superintendent to track it down. Total waste valued at $30 per occurrence. How often did it happen? Carlos said it wasn’t too bad, only about half of the 250 units this builder closed the previous year. Half? Not too bad? It’s not unusual to hear trades pronounce similar failures happening on half of a builder’s homes as “not bad.” It’s such a common occurrence that they just accept it as business as usual.

At first glance, $30 waste per home on 100 homes, or $3,000, may not sound like a huge amount, but eight or 10 items like this add up to real money. Consider how many similar things are going on with other suppliers and trades. Think about foundations, framing, roofing, mechanics, drywall, paint, siding, cabinets, flooring, landscaping, etc. If Carlos finds a mistake on 50 percent of the homes, what will you bet the other suppliers and trades find? Something similar? In our experience with the 200 or so Lean implementations we’ve done, the answer is, virtually always. What one supplier or trade experiences is generally true across the great majority. So if that’s accurate and the average builder engages between 25 and 40 suppliers and trades for each unit, you’re looking at a healthy—or should we say unhealthy—six-figure sum. And here comes your nightmare: This number is grossly underestimated.

**WELCOME TO YOUR NIGHTMARE**

The team said goodbye to Carlos and his crew, then, due to a scheduling glitch, we had a full hour before the next trade came through, so we took advantage of it. I went to the flip chart and asked the team to consider previous incidents from their experience and break down exactly what happens when Carlos the mason is short material, who is involved, how much time it takes, and other ancillary costs. Here’s what resulted:

1. Mason on site discovers decorative keystone is missing from Plan 2515 Elevation C.
2. Two of mason’s crew members stop working.
3. Mason calls superintendent to resolve.
4. Superintendent checks plan, specifications, calls construction manager to resolve.
5. Construction manager calls Purchasing to resolve.
6. Purchasing checks plan, specifications, POs (purchase orders), and then calls supplier to resolve.
7. Supplier checks plan, specifications, POs, internal order sheet, load sheet, and determines that keystone is on back-order because it wasn’t a common specification.
8. Supplier finds documentation that notice was sent to builder regarding back-order delay.
11. Construction manager calls superintendent to give an update.
12. Superintendent investigates why back-order notice was internally missed (and makes note to counsel Design about selecting nonstandard decorative keystones).
13. Superintendent calls mason with update and asks what can be done.
14. Mason suggests using an alternate, more commonly available, keystone.

¡No puede verlo!
15. Mason calls his office to track down the order number for the new keystone, which he recalls from a plan on a previous job for another builder.
16. Mason’s office staff searches for new specification.
17. Mason calls superintendent.
18. Superintendent calls construction manager.
20. Purchasing calls Design for approval.
21. Major debate ensues between Purchasing, Design, and Construction on whether substitution is acceptable.
22. VP of construction gets involved, subsequently intervenes, and overrules Design concerns, citing schedule.
23. Purchasing creates variance purchase order—VPO, also known as an EPO (extra purchase order), FPO (field purchase order); that is, anything not included in original “start package” for specifications and options.
24. Purchasing sends VPO to supplier with rush order for next-morning delivery to jobsite at extra cost.
25. Purchasing calls construction manager with update.
26. Superintendent calls mason with update.
27. Mason puts one guy on cleanup, one guy helping the other guys laying brick, but loses 2 hours of time on each.
28. Supplier locates keystone, arranges early-morning rush delivery.
29. Supplier asks for a VPO and creates invoice for special order and delivery.
30. Supplier sends email wondering whether to change the specification ongoing, cancel the special order, or …?
31. Purchasing receives email and puts it in the “follow-up file,” which is running a month behind.
32. Special order received at supplier and put in hold-for-processing area.
33. Another email sent to Purchasing asking for clarification.
34. Mason finishes next day and sends an invoice for 2 hours of lost time.
35. House complete two months later.
36. Three months later, VPOs for original special-order keystone, replacement item, special delivery, and lost time remain unpaid. Emails continue.
37. One year later, special-order keystone sits on a back shelf in a warehouse. Order processor for supplier picks it up and says, “Wonder what this is for ….” He puts it back down and moves on.
38. Oh, and no one told the customer about the change, but the customer noticed, generating another 10 phone calls.
39. Keep counting. So how many VPOs do you run per house and how do you count them? Comparing builder to builder is tricky at best and often misleading because there are many ways to quantify and track work done outside of the original house cost. Most methods have at least some logic behind them, but to be sure, many are inadequate, to put it kindly. For example, if you have multiple items for one supplier or trade, such as a cabinet company, coming back to fix trade damage, bring a finished end panel that was missed, and replace a door deemed off-color, is that one VPO or three? I’ve seen it done both ways. The first is simpler, but the second captures more data. Or if you have multiple trades required to resolve an issue, are all on a single VPO that’s sent to everyone, or does each trade get its own VPO?
40. Take this example, which I’ve used a couple of times over the years: On a final walk-through one
Friday afternoon in Chicago, the homeowner noticed that the garage service door they’d ordered as a $750 option was missing. The builder’s considerable surprise, panic, and internal blame certainly had its costs, but the real crime was how many suppliers and trades had to be involved to fix it. Let’s break it down by trips:

1. Superintendent evaluates problem and notifies all suppliers and trades.
2. Mason removes half-level brick where door will go.
3. Sider removes fiber-cement siding above the brick up to the door height.
4. Framer opens up wall.
5. Lighting supplier drops off exterior fixture.
6. Electrician reruns wires to exterior outlet in the way and wires switch and door light fixture.
7. Plumber moves gas line from meter running through that space to the rest of the house.
8. Drywaller returns three times to replace and finish drywall that was removed to rerun plumbing and electrical.
9. Supplier brings out door.
10. Lumber company drops off trim.
11. Hardware supplier drops off door handset.
12. Trim carpenter hangs door, installs trim.
14. Concrete finisher finishes door stoop.
15. Mason returns to finish door opening.
16. Sider returns to replace excess siding removed for mechanical work.
17. Electrician returns to trim out switch and light.
18. Painter returns (twice) to touch up siding.

Counting the multiple trips from the paint and drywall trades, that gives us more than 20 trips in total. Now add the management and admin costs. We have at least 15 times that the superintendent stops by to check and coordinate the activities of all the suppliers and trades. Then there are the multiple VPOs that must be drawn up, approved, and issued. When I set up the example and ask groups to guess the cost to make it right, most estimate $1,000 or less. After the detailed breakdown, they all buy in to the minimum $2,500, and probably closer to $3,000, it took to actually install the door.

Be honest. How many of you are living this bad dream right now? Are you counting the full impact of that one measly VPO, which on the surface appears mundane? Do you really track the total cost, not just for you, but also for your suppliers and trades? You want to beat the trade shortage? Start right here. Eliminate the VPOs and you become much easier for trades to work with, far more efficient, and significantly more profitable for them—and you.

Like many of the things I write about, you can’t manage this by memo. You can’t send out an email and expect anything to change. There are specific things you must do, going back upstream to examine all of the issues that created the VPO in the first place. In some cultures, this will be a terrific challenge. In fact, that would be a great exercise for you to do with your team this month. Take 10 ugly VPOs. Thoroughly cost them out—by total cost. Now trace them upstream to their sources. That will provide about as much education with direct cost-benefit as you’ll ever get out of a day’s work this year. If you’ve already done this and repeat it each year, please call or write to tell me what you found. If you haven’t, well, good luck convincing me you truly care about reducing your cost and increasing your profit.

Next month we’ll talk more about how to count and quantify the VPOs—how to get those processes to “talk to you.” We’ll explore the diversionary tactic of “convenient classification,” which confuses the numerator in your VPO measurements, and the artful strategy of “clever manipulation,” which makes a mess out of your denominator. Meanwhile, go easy on the spicy food just before bedtime. That’s known to cause nightmares, and something tells me you already have as many as you can handle. PB

Scott Sedam is president of TrueNorth Development, a consulting and training firm that works with builders to improve product, process, and profits. For a free PDF of the article series about better building practices to limit waste, email your request to info@truen.com. You may reach Scott at scott@truen.com or 248.446.1275.
THE VARIANCE MEASUREMENT QUAGMIRE CONTINUES

MANAGERS USE SOME REMARKABLY CREATIVE WAYS TO AVOID REPORTING VARIANCE. THAT’S THE FIRST MISTAKE
And this year’s award for lowest cost variance goes to ... the Virginia division! As the VP of purchasing strides to the podium to collect his hardware—a plexiglass plaque with the company logo sandwiched inside—there’s polite applause from around the room. Two of the corporate participants, however, having just spent time working on a special project with the Virginia division, clap at the lowest possible decibel level, flashing each other a knowing look that simply says, “This is such BS.” Yes, Virginia, there is a Santa Claus ... but your numbers still lie.

The company—a large, multi-division national builder—puts unrelenting emphasis on cost control. It’s a constant topic of conversation and evaluation, and the divisions compete mightily to win this award. The pressure to use certain national low-bid suppliers, despite their inability to deliver or service locally, is unrelenting.

But the low bid is a mirage. Although there’s some begrudging acknowledgement that bid price means nothing outside of total cost, which necessarily includes all variance, each calculation and buying decision has been based on bid price alone. The Virginia division managed to fool virtually everyone into believing it has the genuine expertise to manage cost. How did they do it? And what are the implications for those who read my August article, “VPO Story—Welcome to Your Nightmare,” and decided this is the year they’ll get on top of this issue?

WHAT’S THE BIG DEAL?

In the world of cost variance, accurate no-tears measurement is critical. Whether you call it a VPO (variance purchase order), an FPO (field purchase order), an EPO (exceptions purchase order), or simply “Extras,” every cent you spend after the initial house budget is a loss and must be accounted for. (For our purposes in this article, we’ll use the most common term: VPO.) The old adage, "You can’t manage what you don’t measure," applies both perfectly and painfully. So what’s the big deal? Just measure variance and get on with it! Not so fast ...

My fascination with numbers began at an early age. I was that odd student who actually enjoyed statistics and took the advanced class in college that wasn’t required. The good news is that understanding the nuances of the numbers reveals what so many miss and, in some cases, are trying to hide. The bad news is that the guy who exposes problems of bad measurement becomes decidedly unpopular with the purveyors of bad data. So heed this warning: Most builders do a poor job of measuring variance and even a worse job of using the data to drive process and system improvements. If you’re the one who takes on the challenge of identifying such issues, don’t expect accolades from admiring multitudes. There will be blood. Case in point is the Virginia story I described. Just like Santa Claus, the division’s variance performance was based on mythology. Whereas the myth of Santa Claus is a mostly harmless one used to entertain small children, The Myth of the Virginia Division misled, confused, and resulted in bad decisions. The two employees who exposed the fallacy of Virginia’s calculations paid a heavy price—no matter that they were right.

Let’s take a deeper look into these calculations.

KNOW AND FIX YOUR COSTS

Years ago I had the privilege of working for Bill Pulte, founder and former chairman of Pulte Homes, now retired. During my first month on the job in January 1989, Bill conducted his annual three-day seminar for construction and purchasing. I’d give anything to have videotape of those sessions. I still follow almost every lesson I learned from him, and there are scores of folks in the industry today who do the same. One of Bill’s mantras was, “Know and fix your costs,” and he would repeat it over and over. That admonition is both true and troubling because it causes reluctance in the field to report things honestly, as costs too often change during the building process. Similarly, purchasing departments that are heavily judged on variance will do almost anything to avoid a VPO.

After watching the remarkably creative methods many managers use to avoid reporting variance, it dawned on me that there are three basic ways to rig the numbers: fudging the numerator, manipulating the denominator, and—if all else fails—simply ignoring their existence.

FUDGING THE NUMERATOR

Most business numbers are expressed in percentages, which requires a ratio of two numbers: the numerator, which is an accounting of the occurrence, over the denominator, which is the base from which the occurrence deviates, good or bad. The simplest example is “margin.” Say we have two groups of kids selling lemonade. Group 1 sells $100 worth of lemonade; that’s our base, the denominator. They subtract all costs and count what’s left. Now they have a numerator for the top of the equation, which is $10. And $10/100 = 10%. Simple, right? But wait,
the kids in Group 1 didn’t allow anything for Mom’s time spent helping. And although they paid for the cups and lemonade mix, nothing was paid to rent the pitchers, wooden spoons, or paper towels, nor did they allow for the use of Dad’s portable work table for the stand out by the street. And what about their labor? So is this number real? Group 1 is feeling pretty proud because the kids down the block report they made just 8 percent. But how is that other group measuring? What are those kids including or not including? Does GAAP (generally accepted accounting principles) apply to lemonade stands? Bottom line: Neither group of kids has a clue as to which lemonade stand was most profitable. These numbers tell us little.

The same things happen to home builders measuring variance. Again, let’s start with the numerator. Exactly what do we count as a variance from the original “known and fixed” cost? If we’re purists about it, a variance is absolutely anything that’s not included in the original cost estimates for everything that goes into the house—labor and material. Someone breaks a window? Variance. Someone runs over a curb and cracks it? Variance. Scratches on a wood floor? Variance. Repair to a damaged shower liner? Variance. The same for a damaged countertop, an extra 3 yards of concrete, a square of shingles, or another load of gravel for backfill. Even at this seemingly simple level, there are issues that distort the picture. Maybe the sales rep for the window company is desperate to win your next contract and just replaces that broken window for free. The framer is a golfing buddy and he doesn’t charge you. The roofer says he has a square left over from another job and he’ll bring it over, no big deal. His guys have been really busy lately so he can just send them home early. But two of them have to make an extra trip to this house to finish tomorrow, which will slow down the next job. He’ll work it out because his dad started in business with your dad and “That’s just how we do things.”

Great, right? What about the data you need for continual improvement? If it’s not reported, it’s not tracked, and if there’s a trend in shingles or gravel or any material or labor, how do you know how to respond? Short answer, you don’t. But the pressure to hide the variance is so great that you accept it. People always gravitate to the option of perceived lowest pain. From here, it gets way, way more complicated. How about the tile order that was coded wrong, has to be torn out, and the replacement rush-ordered and reinstalled? That’s going to look really ugly, but there is just no way to bury one that bad, right? OK, so you still believe in Santa Claus, too, and maybe it doesn’t happen in your company, but I guarantee that your folks know how to hide it assuming there’s sufficient motivation.

How about late change orders? Is it fair to call them a variance when they’re usually the fault of sales or the design center or the boss who just can’t say no? Fair or not, it’s a variance, and you have to put it down. Maybe you can make up for it somewhere else. Of course you can. Categories such as “Losses and Replacements” or “Winter Conditions” are known as dumping grounds for all manner of variances. Short 10 sheets of OSB due to an estimating error? There’s extra money in Losses and Replacements to cover that, let’s call it “stolen.” You got behind on a couple of homes and the drywall stage was pushed back to December, resulting in $500 in extra propane? Winter Conditions handles it fine. If I had more space here, I’d love to detail the operation that buried a plethora of suspect items in “Model Maintenance,” which conveniently came under the sales and marketing budget. Or another operation that happily transferred most of the extras it took to get the house finished in the final two weeks into the warranty budget.

I could give you a hundred pages of examples, and I know right now your mind is already racing with those from your own experience. Step 1 is to get everyone to understand exactly what constitutes variance for every cost code, and that’s far more difficult than it sounds. Go through every example your team can conjure up. Ask: How do we count it? Where does it go? Next is to get everyone to agree to honestly report every variance. Every time. Burying any variance in the buddy network or with creative accounting tactics should be classified as a major sin. Subject to dismissal? Would this level of change be painful? Yes, but now consider the denominator of the equation, which is in many ways a bigger problem.
MANIPULATING THE DENOMINATOR
I have threatened colleagues—only half in jest—that if I ever even semi-retire I will write a couple of books with rude titles. At the top of the list, sanitized somewhat for the reading audience, is “Screwing With the Denominator—the Legacy of American Business Accounting.” Give me the numerator as pure as possible and I can still significantly change the percentage by manipulating the base. The simplest way is to loosen up the budgets. Let’s sneak a bit more into concrete, gravel, lumber, roofing material, etc. Do the same with labor—heck, everyone knows those costs are up everywhere.

Suddenly, my variance percentage looks a lot lower. And where do we cut off the house budget calculation? The best practice is to issue a house start package with every option selected and firmly priced by each supplier and trade involved. Building commences, and every additional cost beyond that budget is variance. That’s a radical change for many builders that allow selections way beyond the start date. How can you determine the base for those options? In short, you can’t. The good news is that it provides a few additional opportunities to bury additional cost as you go. “Hey Brad, that extra 50 feet of line set you need on Lot 42 because the compressor has to move to the other side? The customer on Lot 50 wants to upgrade to the variable-speed furnace with 21 SEER. Just give me a higher price on that to cover the line set, too, OK?” So, what’s the big deal with that? I’m going to let you ponder it. If you see all the consequences, you get it. If you don’t, then keep looking.

Just as with the numerator, I could provide a ton of examples of how to increase the equation’s denominator—the base. At the most basic level, do you calculate it as a percentage of sales price or as a percentage of house cost? There are strong arguments to be made for either, but as long as you decide how to do it for your operation and you do it consistently, you’ll begin to see the patterns as your systems and processes “talk to you” through their numbers. Be especially careful comparing your numbers to those of other companies or even those of other operations within your own firm because no one ever measures things the same way.

DENIAL
When all else fails, the last (and ugliest) surefire way to reduce variance is simply to disavow its existence. We cajole the supplier to replace the damaged material based on the promise of the next project. We lean on the trade to supply the labor based on our long-standing relationship. The worst example of all is the minimum $10,000 bill buried under every house in the U.S. due to wasted or otherwise unnecessary trips to building sites by suppliers and trades. At TrueNorth, we have the cold, hard data on this from more than 200 builders using more than 5,000 trades, so there’s nothing speculative about it. That is all variance, all waste, and it kills margin, yet it’s virtually never counted. From our data we know that suppliers and trades attempt to collect on these trips less than 10 percent of the time because “that’s just home building.” Meanwhile, purchasing typically pays about 10 percent of the ones they do receive. Do the math. The bottom line on this massive variance item is you only see 1 percent of it (10 percent of 10 percent). Ask yourself then: How will we ever learn to improve?

An author named Ron DeLegge II writing about the shenanigans on Wall Street said, “99 percent of all statistics only tell 49 percent of the story.” That also applies to home building, and the culture at building companies can dramatically affect the numbers. In a culture of fear, the numbers can never be trusted. Next month we’ll lay out a step-by-step model for establishing your variance calculation and, even more important, some concrete ideas for how to process the data and use it to improve both profitability and sanity for builders, suppliers, and trades alike. PB

Scott Sedam is president of TrueNorth Development, a consulting and training firm that works with builders to improve product, process, and profits. For a free PDF of Bridging the Margin Gap, with this and other articles on how to increase profit, email your request to info@truen.com. You may reach Scott at scott@truen.com or 248.446.1275.
WHAT LIES BENEATH--
THE SINKING OF A HOME BUILDER

YOU CAN HAVE AS MANY PLANS, ELEVATIONS, AND OPTIONS AS YOU LIKE, BUT ONLY IF YOU HAVE THE SYSTEMS, PROCESSES, AND STAFF TO SEAMLESSLY HANDLE THEM
Titanic Homes had been known as a strong, profitable volume builder for years, but emerging from the housing crash, things began to go wrong. Sales rose considerably as profit dropped and several key players left for other firms. Titanic’s banks and investors weren’t happy. The president, Ed, called my firm and declared his intention to get to the bottom of it, and soon two of our TrueNorth team members were on their way to help. We quickly discovered that what Ed really wanted was an outside professional to confirm the notion already firmly entrenched in his mind. His take? Ed believed Titanic’s managers simply weren’t cutting it and were allowing suppliers and trades to run roughshod over them.

After applying our process with suppliers, trades, and internal staff, a pattern about the margin loss began to emerge. There was nothing wrong on the surface with the managers’ sales, cost, or profit projections at the start of their houses, yet 90 percent of them failed to make plan margin. Why? Where did Titanic’s margin go between contract and close?

THE ICEBERG KNOWN AS VPO
As we puzzled out the source of loss, it was clear Ed had no mind to hear the truth from his own people, so we convinced him to run one of our week-long Lean Process implementations. First, we prepared suppliers, trades, and the builder’s “LeanTeam” in advance with the right questions and clear, straightforward instructions. Then all 23 suppliers and trades came in for meetings over three solid days, one company at a time. Each testified in their own words, recounting their experiences, backed by examples, about the good, the bad, and the ugly of working with Titanic. In this case, the feedback ran mostly from bad to ugly. It was one of the most painful weeks we’ve ever seen a builder team go through, but also potentially one of the most educational and beneficial.

Given this is the third in my series on the nightmare known as the VPO—variance purchase order—you shouldn’t be surprised that VPOs lie at the heart of this particular builder’s problem, although VPOs were really just the symptom of deeper issues. Like the proverbial iceberg that sinks ships, a huge number of problems lay beneath the surface. Yet Titanic’s visible numbers were clear. An inordinate amount of work done on the homes took place under VPO.

Most builders will budget 1 percent to 2 percent of “hard costs” (aka “house costs” for many builders) for a VPO “do-not-exceed” target. Some do better, some worse, but let’s pause for a word of clarification about hard costs/house costs. On a percentage basis, hard costs tend to run 50 percent plus or minus 5 percent of the house sales price in typical markets, depending on local land and development costs. Mathematically, when land costs run up, that number artificially pushes down the house cost percentage. There are markets where finished lot costs are so high that house costs as a percentage can be pushed down to 40 percent or even lower, having nothing to do with efficient purchasing and construction practices. We see this in particularly hot East Coast and West Coast markets, but it can also happen in urban markets well away from the coast.

One of the most amazing scenarios is found in the Canadian market known as “GTA”—the Greater Toronto Area. There, a combination of demand, scarcity, and regulation can increase lot cost to 50 percent or more of the finished home price, making the hard-cost percentage look fantastic. In other markets though, particularly in the South, land is relatively cheap, and house costs may look artificially high on a percentage basis. Truth is though, by house cost percentage alone, you have no idea. Thus, beware of comparing numbers with any builder whose land price is substantially different.

By Scott Sedam, Contributing Editor

ProBuilder.com  Professional Builder  47
from your own. The only way to sensibly look at these numbers is to use variance as a percentage of house costs/hard costs, not as a percentage of sales price. Yet a variance of 1 percent on a house cost of 60 percent will mean very different total dollars than a variance of 1 percent on a house cost of 40 percent. Again, comparison is tricky stuff.

For Titanic Homes, the suppliers and trades that participated in the Lean Process told Ed what his own people and hired-gun consultants had also desperately been trying to tell him: Titanic’s processes were broken, and the one most symptomatic of a long list was VPO. Nearly every supplier and trade brought it up, including the continual problems with inadequate specifications, incomplete plans, design changes after start, late change orders from customers, etc., etc. In short, Ed had positioned Titanic Homes as a high-volume custom builder while trying to operate internally as a production builder.

Distilled from 30 years of working with more than 250 builders in five countries, we can offer you this irrefutable law: Builders can have as many plans, elevations, options, and selections as they want—even custom options—if, and only if, they have the systems, processes, and trained staff to handle them with no disruptions to schedule or personnel, and that includes suppliers and trades. Stop there and consider the question: Can you measure up to that standard? If so, you are one of perhaps 5 percent of the builders in the U.S. and Canada that can. Titanic Homes wasn’t even close.

WHAT ABOUT OVERHEAD?
After running the entire operation through the reality filter—no tears allowed—Titanic ran a very conservative estimate of 6 percent of hard costs as extras after the initial contract for house and options, less than half of which actually showed up on VPO line items. At that point, it was merely an estimate because the measurement standards were so poor. Many costs that should have been classified as VPO were buried in other accounts, such as “Losses and Replacements,” “Winter Conditions,” or any other handy account with a surplus. We even saw late charges pushed into “Model Maintenance” in the sales budget, and no one in sales had ever noticed! Many other charges were written off as favors, paybacks, or deals to be made up in the next project. And, more often than we’d have believed, attempts by suppliers and trades to get paid for extra labor and material were simply ignored.

Believe it or not, it gets worse. How many builders, when calculating variance, factor in the overhead costs generated by VPOs? How much time, both in the field and inside the office, is spent on supervision, costing, design change, and all of the paperwork required to handle VPOs? We’ve found a good rule of thumb is 50 percent of whatever you book as extras. Start there and work through some specific examples in your own firm to come up with your factor. Don’t be surprised if you find it’s even greater than 50 percent.

So, in our “typical” $300K production home in a typical market, let’s keep it simple and say we have 50 percent hard cost, or $150K. A strong builder will try to run no more than 1 percent of hard cost as variance, in this case $1,500. Given everything that can happen or go wrong in the course of building a house over three to five months, outside, with 30 to 45 suppliers and trades and as many as 500 folks involved, $1,500 sounds pretty impressive. Now I refer you to my first two Professional Builder articles this year on this topic: “VPO Story—Welcome to Your Nightmare,” in August, and “The Variance Measurement Quagmire—the Nightmare Continues,” in October. In those we explored the many pitfalls in measuring and how one presumably small issue of a missing item on site can mushroom from a single phone call costing perhaps 15 minutes to a 50-step fiasco with a true cost exceeding $1,000. Just how many of those do you have per unit? That’s $1,000 of cost that’s never accounted for. At Titanic, this activity in total consumed half the time...
of the entire purchasing and estimating staff combined.

This “VPO iceberg” sank Titanic Homes. Our team is very good and we tried every imaginable way, but we couldn’t get Ed to accept responsibility or reality and address the problem head-on. The fact is, as big as the problem appeared to be above the surface, what lay beneath the surface was so daunting Ed couldn’t deal with it. There was no discipline whatsoever in managing plans, specifications, bid packages, start packages, design center offerings, or the cut-off dates for options and selections. Consider that idea of what lies beneath the surface ... What’s wrong upstream that results in VPOs during the construction process? VPOs are, in reality, just the symptom of all the problems at the source.

I hope that some of you now wonder if perhaps that low VPO percentage you brag about isn’t quite reality, and just maybe you should give this a closer look. As I am driven to say so often in my columns, you can’t solve your VPO problem by threats, memos, or declarations from the supreme command. You must challenge every single thing you do upstream, everything that lies below the surface that results in variance costs during the construction process, whether or not those costs are properly documented—and don’t forget the overhead. Those upstream requirements include:

1. **Purchase land right** with early determination of product type and requirements.

2. **Insist that architects and engineers produce plans that are efficient to build** and conform to standards of Lean Design with fully detailed construction drawings.

3. **Involve key suppliers and trades early** in plan refinement and specifications.

4. **Provide sufficient time and talent to prepare 100 percent complete bid packages** with all specifications including plans, construction details, elevations, options, and scopes of work.

5. **Provide sufficient time and talent to produce 100 percent complete start packages** with all specifications including plans, construction details, elevations, options, and scopes of work.

6. **Make sure you have fully trained field supervision** to continually manage all aspects of the construction process and to maintain the schedule.

7. **Cultivate a well-developed stable of strong suppliers and trades** to implement all elements of the construction process.

8. **Offer well-conceived, fully costed (with overhead) options and selections** with input from design/architecture, sales, the design center, purchasing, construction, and warranty.

9. **Have mutually developed, fully agreed upon cutoff dates for options and selections**—with sales, the design center, purchasing, and construction all signing off.

10. **Ensure senior management is responsible for maintaining discipline** in all of the above processes.

A failure in any of these 10 results in variance cost, one of home building’s biggest robbers of profit. In the final analysis, this is a culture problem, and culture is set by leadership. What should have been a company-changing learning opportunity for the entire Titanic Homes team was lost due to Ed’s failure of leadership.

In the next article in this series, we’ll dive deeper into culture, lay out a specific step-by-step approach to reduce the costs of variance, and outline a simple but powerful process your team can employ to get to the bottom of your most vexing VPO problems and eliminate them. But get started working on these 10 factors—the less visible elements that result in VPOs. Your process, your people, and your profit margins will thank you. **PB**

Scott Sedam is president of TrueNorth Development, a consulting and training firm that works with builders to improve product, process, and profits. For a free PDF of “Bridging the Margin Gap,” with this and other articles, email your request to info@truen.com. You may reach Scott at scott@truen.com or 248.446.1275.
THE VPO CURE: A STEP-BY-STEP GUIDE

ANY WORK COMMISSIONED AFTER THE START OF A HOME SPELLS WASTE, AND THAT WASTE IS CRIPPLING. HERE’S THE FIX

By Scott Sedam, Contributing Editor

When I set out last summer to write a column about the insidious, margin-rob- bing problem of variance, I didn’t expect the first to morph into a series of four, but in truth, it could go longer. Most often expressed by the VPO—variance purchase order—the problem is just too big and that complex. You may use the common term VPO or variants such as FPO (field purchase or- der,) EPO (extra purchase order,) or simply call them “extras,” but thought to be a 15-minute nuisance actu- ally required 40 steps to resolve with a true cost of more than $1,000—on every single house. Ninety-five percent of that loss had never been measured on any VPO. How can that be?

In the next article (“The VPO Measurement Quagmire—The Nightmare Continues,” October 2017) we faced the reality that the sum total of variance is never calculated, and what is tracked is often counted incorrectly. We examined tendencies to cherry-pick the nu- merator, manipulate the denominator, and the huge measurement obstacle of culture when the numbers are buried or ignored. Only af- ter I submitted that article did it dawn on me

the principles and problems are the same. Whether prod- uct or process, material or la- bor, any work commissioned after the start of a home spells waste.

This waste is crippling and so of- ten missed, as we saw in the first article through the eyes of a local masonry contrac- tor. (See “VPO Story: Welcome to Your Nightmare,” in the August 2017 issue.) We learned how a builder team need- ed just 45 minutes to determine that one “throwaway” item
that I neglected to put a name on the single largest variance cost category of all, one that I have yet to see tracked by a single builder out of more than 250 case histories—and that includes many of the very best builders in North America. It’s hiding in plain sight, yet deceptive because it’s buried in a hundred budgets. Think you’ve got it? We’ll return to this issue at the end of the column.

Finally, in last month’s article, (“What Lies Beneath: The Sinking of a Home Builder, November 2017) we considered a builder slowly destroyed by a massive variance problem that sucked the life out of employees, suppliers, and trades alike. Everyone had it figured out except for the company owner, who was unwavering in his total commitment to denial. That case remains perhaps the single most frustrating experience of my professional career. We wrapped up the column with a brief presentation of 10 Essential Steps to eliminate variance—all the upstream things you must do to prevent VPOs from being born. In variance, prevention is truly the only thing that matters.

**BY ANY OTHER NAME**

Variance runs so deep in many builders that they simply accept it as a part of doing business. Those firms will pass right over this column series with hardly a glance, thinking there is no problem, so why spend time on it? In fact, there are builders who let their option and selection process intrude so far into the actual construction of the home they fool themselves into believing these aren’t extras at all, “it’s just home building.” Yet, with apologies to Shakespeare, who famously wrote in *Romeo and Juliet*, “A rose by any other name would smell as sweet,” let’s state unequivocally that, “A variance by any other name would stink to high heaven.” No method of ignoring or burying variance will remove the stench of margin decay.

Presuming, if you made it this far, you have most likely bought into the issue and are ready for a practical road map with guideposts. Use the following as a place to launch from and milestones to check off. Don’t assume you have it right and skip anything. That comes with a price.

**ESSENTIAL GUIDEPOSTS**

1. **Value the variance (preliminary):** In an ideal world, you just lay the variance problem on the line with a good team and have at it. Yet, for most builders, this is insufficient because they’ve never consistently measured, tracked, reported, or held everyone accountable. You need at least a cursory understanding of the depth of the problem to generate the motivation to see it through. What gets everyone’s attention are cold, hard numbers that document the true total cost of variance. Share it with your carefully selected team, then attack
the issue. Your preliminary numbers will be far from comprehensive, but they’ll be enough to light the fire.

2. Check the culture. This requires brutal honesty. In a culture of fear, people will commit every sin of measurement detailed in the second article. Guaranteed. If this is a problem in your company, find your allies with the guts to address it up front at the highest levels. Correcting a pervasive variance problem requires frank, open, and unassailable measurement, which demands positive support all through the process. If anyone believes honesty will cost them their standing in the company or possibly their job, a severe yoke is hung on your ability to reduce variance in a way that sticks. This is not a search to place blame. It’s an investigation to expose all causes of variance and to remedy them. Can you see why this may create a big problem?

Let’s assume you convince your staff that consistent, honest reporting on the total cost of all variance is in their best interests. Your variance calculation will likely double, triple, or more. Your target was 1 percent and your past measurements supported that. Now, with the veil fully lifted, you discover it’s actually 4 percent. How many are confident that senior managers will stay calm and remain steadfast in the mode of, “Let’s not assign blame, let’s find the source and fix it”—especially when some of the cause points right back to senior management? How many of you who are senior managers could? And one more thing: Check the compensation structure. If you find any incentive that rewards people for keeping the variance calculation buried or artificially low, deal with it. Immediately. Never incentivize bad behavior.

3. Decide what you will measure and where you’ll begin: Anything that happens after a “start package” or “job release” goes to your suppliers, trades, and field managers is a variance. It can’t be normalized as part of your building process. If you make excuses, allowances, and routinely accept change orders, late or otherwise, you’re in denial and you’ll never solve it. To make this even more challenging, you have to measure variance in two ways in each category: by dollar value and by incidence. Looking at just one or the other will fool you. You may have, for example, 10 instances of missing items on tile orders in a month, which average $50 each for a total of $500. You also have just one occurrence of a mistaken order of the wrong tile for an entire job that costs you $2,500 including the labor to remove and replace. In this case, 1 is clearly worse than 10.

4. Determine numerators and denominators, and lock in measurement periods. You must be completely intentional here and address each step separately. Go back to the second article on measurement and review all of the mistakes and yes, shenanigans, that go on with both numerators and denominators in equations. Establish what goes on top, the variances you will count, and what goes on the bottom, the base from which the deviation occurs. Consistency is critical. Now consider the time period. Line item variances are typically tracked monthly, but in some cases you may need to track weekly if the problem is severe enough. Again, be consistent. And as I said in the opening, their remains one massive factor that no one counts. Do you have it yet? We’ll address that in the close.

5. Design and commit to the reporting. Each item you selected in Step 4 needs ownership by someone to collect and log the data, calculate the ratios, chart the numbers, quality check sources and calculations, then publish. Of course, you need a spreadsheet with each variance tracked monthly, but remember the laws of statistical variation. Some variation in the numbers is normal and expected. Don’t knee-jerk. When does a change signify something significant? What are your criteria? When you overreact, you create “induced variation” and things get worse, not better.

Now establish your “VPO dashboard.” From that master list of variance you create the five or seven—usually 10 at the most—measures that tell the essential tale. Are you getting better or worse? These are measures that everyone understands. Use graphic representation whenever possible and appropriate to enhance awareness and understanding.

6. Structure your response. I spoke with a builder just last week that held a weekly “VPO meeting” to thoroughly review each one for cost, source, and how to prevent it. In the beginning, you may also need weekly meetings with a goal to hold them monthly, as you improve. Perhaps you’ll get so good that a quarterly review will suffice. Whatever frequency you choose, establish who attends the meeting, when and where it’s held, and for how long. Make the objective clear. Again, this isn’t an “assignment of blame” meeting; the focus is on preventing all forms of variance. You’ll solve the day-to-day problems of variance and, at times, the adjustments are embarrassingly simple. We once saw a six-figure
cost reduction simply by getting the POs, VPOs, and cost codes to all match up. This is also where you (finally) accumulate the data that makes your case for the new software, additional head count, or restructuring some part of the business. The great news is that you will almost unavoidably find the dollars to pay for the changes you want, many times over.

THE EXERCISE
Here is a very practical way to get started. Print out your last 100 VPOs. No cherry-picking. Put together a good team—at least half should have some idea that variance is a concern. You’ll need participation from field construction, purchasing/estimating, sales, design center, accounting, architecture/design, and warranty. Don’t worry that some don’t directly deal with the VPOs each day. They are all affected by them and you need those who can look construction and purchasing in the eye and ask, “Why?” Or declare, “That makes no sense to me.”

If you can recruit enough to make two or three cross-functional teams of three or four associates, all the better. Give each team a stack of 25 to 30 VPOs. Ask them to slowly and thoroughly review each, costing them out for everyone involved, including suppliers, trades, and every single individual and department touched by the VPO. Have them determine classifications for all of the costs encountered and for the reasons why they occurred. Now compare notes, compile and condense the classifications and determine the costs. Your team will gain a much greater understanding of the causes and costs of VPOs and will accomplish a good first step toward prevention. With this data in hand, you’re on your way to completing Steps 1 through 6 above.

During that exercise, your team will quickly run headlong into the great unmeasured factor I’ve been promising to reveal. Remember the minor 15-minute nuisance item that turned into 40 steps costing more than a thousand dollars per house? Walk back through those steps and you find that at least 90 percent of them, representing the vast majority of the cost, were buried in overhead. Time for the mason, time for the superintendent, time for the estimator—and the ordering clerk on the supplier end, and the shipper, the picker, the packer, the driver, the accounts payable clerk, the accounts receivable clerk, and on and on and on. Yet what went on the VPO? Thirty bucks for the new keystone, less $25 credit for return. Five bucks!

Our considerable experience with more than 4,500 suppliers and trades participating in our week-long LeanBlitz sessions shows us a low, very conservative estimate of $1 overhead for every dollar in hard cost material and labor specified on a VPO. In the case of our missing item for the mason, the overhead-to-hard-cost ratio was closer to 20:1! Let’s be honest. Do you count that? Do you track that? Is it eating away at your profit margins and those of the suppliers and trades you so desperately need? Is it time to start paying more attention to this?

MIGHT A SIGNIFICANT REDUCTION IN VPOs GO A LONG WAY TOWARD YOU BECOMING THE BUILDER OF CHOICE?

BIG STAKES
What’s at stake for solving the variance problem? Our significant data base says an extremely conservative take is 2 percent of the top line revenue. About half of that shows up as a percentage of hard cost, the other half is in overhead buried across 100 accounts, but mostly in time lost for construction, purchasing and we’re not even counting the impact on suppliers and trades. Remember, you will see all of this until you begin to count the total cost of variance completely. The margin improvement is more than enough reason to put a major emphasis on variance reduction but consider this. Might a significant improvement in this arena go a long way toward becoming their builder of choice and help you beat the trade shortage?

Remember our builder going down the drain in the third article? We determined that half of his total cost in construction and purchasing staff was burned up by VPOs. If your loss is just a fraction of his, solving the variance problem is more than worthy of pursuit. I hope with these four articles you find stronger motivation to dive deep into the issue and fix it—and more importantly, do what it takes to keep it fixed. Please call or email me with your discoveries and revelations during your own journey toward the abolition of the VOP. That would make another great column, maybe a year from now. PB

Scott Sedam is president of TrueNorth Development, a consulting and training firm that works with builders to improve product, process, and profits. For a free PDF of “Solving the Variance Nightmare,” four articles on the impact and implications of variance, email your request to info@truen.com. Reach Scott at scott@truen.com or 248.446.1275.
If I had any impact on you with my two recent columns, “Grand Theft Home Building” (July 2017) and “VPO Story: Welcome to Your Nightmare,” (August 2017), then you’ve been losing some sleep.

The revelation in the July column is that after more than 200 in-depth builder case studies in five countries, we know that a very conservative $20K to $30K is lost on each house we build through oversight and neglect in process, product, and plans. This represents 7 percent to 10 percent of today’s average new home sales price of just over $300K (for homes selling at $500K and under). At higher price points, the percentage of waste exceeds 10 percent. If we push further up the value stream into the waste that flows down from manufacturers and suppliers, the number doubles. A multitude of lean studies done in other industries, all far more efficient than home building, shows waste exceeding 20 percent and often greater than 30 percent. These are not theoretical numbers. They are as real as the margin you are losing and, as you’ll see, engineering is a prime culprit.

Also, you should respond to these losses no differently than if someone were stealing the dollars directly from your bank account.

Waste in product is huge yet pales in comparison to waste in process, although the latter is tougher to measure. In the August column, we homed in on VPOs (variance purchase orders, aka EPO or FPO), anything done after the initial bids and contracts for a house, as among the worst sources of the margin loss nightmare. Measurement is tricky here because everyone assumes the baseline denominator in a variance calculation is solid, both mathematically and ethically. Are you sure? You can quickly make your variance number drop dramatically if you just gross up the original cost estimates and put more dollars in allowances for losses and replacements, theft, or winter conditions among other handy “cost dumps.” Who among us hasn’t played the “Where do I stick this cost so no one will notice and it won’t increase my variance” game? Only once or twice, right? Do you think your people might be compelled to do the same?

All that aside, if you do everything it takes to cut true variance to a bare minimum based on rock-solid initial estimates and calculated allowances, you will have to do so many other things right that everything improves, including the bottom line. I began writing this month’s feature with the intent to address measurement of these processes to better learn from them, because that’s something we don’t do well in home building. I decided, however, that we are not quite ready for that, and it’s best to first spend more time convincing you of the magnitude of the issue by examining additional areas of loss. If we can get sufficiently agitated over these causes of margin depletion, maybe I can convince you to take a hard look at your measurements.

It so happened that a couple of weeks ago I was with a builder and while walking houses I had no trouble pointing out considerable issues in framing waste. Some were commonly seen local framing traditions, such as excess cripples, kings, jacks, and the ubiquitous non-bearing header over a firebox. Others, however, were clearly sourced in the engineering of the house. This, to put it mildly, makes me completely crazy, and when I see it, it is hard to stay calm. In one unit particularly festooned with excess beams and seriously redundant
shear provisions, we pulled out the plans and had a look. After a 10-minute review and discussion, I asked the VP of construction how he'd describe what he saw. He looked disgusted, threw up his hands, shook his head, and uttered, "Lazy engineering!" Nods all around the room.

Is that too harsh? Do we have a lot of lazy engineers scattered around our industry who are costing us considerable time, materials, and labor, wasting our precious margins? The only cold-hearted, no-tears, just-the-facts-ma’am response based on the evidence is a resounding “Yes!” My colleagues and I have collected literally thousands of pictures of lazy engineering and have some specific recommendations for you to combat this problem, but let’s first delve into a few examples from around North America. As we do, make notes on some of your own that will no doubt come to mind.

TENNESSEE

Entering the two-car garage of this house, I looked up to see two massive 16-foot beams running left to right,
about 6 feet in, supported by a sandwich of 10 2x4s on each end. Beyond them were I-joists spaced at about 16 inches all the way to the back wall, supported on both ends by joist hangers. From the beams coming back to the garage door opening were four doubled trusses, easily carrying the weight of the gable above, yet the garage door opening was framed with two 12-inch lam-beams with supporting posts far beyond what any possible shear requirements would specify.

My questioning look was met with a curious explanation. This home offered an optional storage area above the garage. It could be floored out and walled in with access from an upstairs hallway. The engineer provided plans to build this with the option selected, but none without. Yet only 10 percent of customers chose the option. Even if one did, the structure was easily more than double than that required by code. The bottom line was, for 90 percent of these homes, the waste bill ran to more than $2,000 as the entire garage roof structure could be done with trusses alone without either set of lam-beams, eliminating all I-joists, joist hangers, supporting posts, etc. Even for those homes with the bonus room, there was at least $1,000 in waste with over-spec’d lam-beams, I-joists over-sized and too close together, using joist hangers instead of ledger boards, and excess supporting frame members. Everything was built—exactly—according to the engineering specifications. Someone was sleeping on the job.

ONTARIO
I had never seen so much steel in a house before. Not just in the basement, but also on the first floor. And all of it was going to be framed out and wrapped in drywall. These were straightforward two-story homes, and after walking thousands in my career, I concluded with 100 percent confidence the expensive steel could be replaced with less expensive wood products. And who has more wood resources than Canada?

My sincere queries got the tepid response, “We build them like the engineer specs them.” “Do you ever challenge them, question them?” I asked. Everyone hemmed and hawed until the purchasing manager spoke up: “Well, we aren’t engineers, and whenever we ask them about something they are quick to remind us of that and see how many times they can use the word ‘liability’ in the same sentence.” Sigh. More engineering laziness. Time to rebid the engineering—with a more strongly written scope of work and hiring criteria.

TEXAS
The lean session with the foundation contractor finished up, and he was dynamite. He showed the builder more than $1,000 of savings per unit by changing the depth of beams and number of cables in their post-tension slabs while still meeting code requirements. Everyone was excited, but I noticed the young COO with a very pained look on his face. “You should be happy!” I suggested. “That could exceed a million bucks savings this year.” He answered, “Yeah … just give me a day to get over the $5 million we buried in the ground since I came on board.” The cause? If you guessed “lazy engineering with a dose of CYA” you are right on target. The foundation
contractor was building to the exact specifications provided and gave quite a speech on the problem with engineers who don’t listen and never, ever come out to the jobsite. Lazy? His description was more like “indolent.”

BUT … BUT … BUT …
I don’t know what to call these examples and a few thousand others except “lazy engineering.” If it takes hurt feelings and heated calls or emails to get the conversation going, that’s quite all right.

There is a small minority of engineers that will read this and think, “Yes, this is exactly what happens. I see an opportunity. Let’s fix it.” The majority, though, will want my hide and, in their defense, they have some valid points. There is not an engineer anywhere who cannot tell endless stories of builders who simply do not want to pay for thorough, efficient engineering. Guilty as charged. The builders’ hang-up is they simply do not understand the cost-value relationship and believe by squeezing $500 from the engineering bid they actually save money. Whose job is it to help the builders understand the numbers? Perhaps the engineers? Could this be an opportunity?

Another valid complaint we hear from engineers is, “The lumber (or truss) company did the engineering, not us.” There are at least six or eight different suppliers that provide software to lumber and truss dealers for calculating load requirements, and guess what? From what we’ve seen, they all calculate high. They base their calcs on worst-case assumptions, and who can blame them? So OK, start there, then give it an intensive review and work out all of the excess.

We do work with a couple of engineering firms that truly get it, and we have learned much from them. Yet they look at their job quite differently than most. The standard definition of construction engineering goes like this: The branch of science and technology concerned with the design and building of structures.

The best engineers we know think of it this way: The branch of science and technology concerned with the efficient design and building of structures that meet or exceed every code at the lowest practical cost.

That makes all the difference and, let’s be honest, have you ever had that specific discussion with your engineer? How will they react if you do? If they don’t get it, then you have the wrong engineer. If they claim they get it, it is their obligation to prove it to you—on every house you build. The definition of the job of engineering needs to change.

FEET TO THE FIRE
I hope that while reading my examples here, you were thoroughly distracted as many of those on your own sites came to mind. Or maybe you were wondering just how many you have—and are paying for—yet are missing?

That question also applies just as much for the engineers out there. Every problem, obstacle, or regulation raised in the path of home builders provides a unique opportunity that few have the guts, smarts, and will to overcome. Most of your competitors are not willing to work that hard, and that can be very good news, provided you are. Meanwhile, empower your staff to challenge the engineers and give them the basic knowledge to do so. Don’t accept anything that at least gives the surface appearance of overkill. More often than not, you’ll be right. The minimum average savings we have seen from the 200 case studies is $1,200 per house, and that is without going too deep. Being conservative, let’s call it a sure-thing $1,000 per unit this year. Would that make a difference? And remember the point from “Grand Theft Home Building”: How would you respond if someone were stealing from your bank account? I thought so.

There is not an engineer anywhere who cannot tell endless stories of builders who simply do not want to pay for thorough, efficient engineering. Guilty as charged.

Author’s note: As always, we encourage you to share with us what you find. To facilitate this we have launched two new Facebook pages for people to submit pictures from subtle to downright offensive regarding engineering and architecture. Please check out “The Lazy Engineer” and “Crimes Against Architecture” on Facebook and, yes, all builders, architects, and engineers are encouraged to submit. We may have some fun with these, but remember, it’s all about learning how to build better—how to be better.

Scott Sedam is president of TrueNorth Development, a consulting and training firm that has worked with 200 builders in five countries to improve product, process, and profits. For a PDF of “The Lazy Engineer,” containing this and a collection of other articles, email your request to info@truen.com. You may reach Scott directly at scott@truen.com or 248.446.1275. Scott invites you to join TrueNorth’s LeanBuilding Group at www.linkedin.com.
Scott Sedam is President of TrueNorth Development, an internationally-known consulting and training firm focused exclusively on the building industry. Now in its 21st year with a staff of five field consultants, TrueNorth conducts consulting projects and training workshops with more than 200 builder, supplier & trade clients in the U.S., Canada, Australia, New Zealand and Mexico. During the recent industry downturn, TrueNorth’s LeanBuilding™ processes saved clients more than $250 million, demonstrating clearly how to improve product, process and profit without compromising the product or builder, supplier and trade relationships. Scott Sedam’s presentations are a popular feature at industry conferences and company meetings. Scott is a Contributing Editor for Professional Builder Magazine and has published his multiple award-winning column in the industry for more than 20 years. He is a passionate advocate of the application of Lean Methods as the one way to reduce cost and increase value without the collateral damage that inhibits long-term growth and success.

Scott began his career as a production supervisor for U.S. Steel’s South Chicago Works, then the largest structural steel mill in the world. From both company and union management he learned “anti-quality” – everything not to do to produce a quality product at a fair price. From the mill workers Scott learned the insatiable desire of people to do the best possible job and improve their work – if given the opportunity, tools and support. From there Scott moved to Motorola, the winner of the first Malcolm Baldrige National Quality Award, where he learned what quality really meant from a company that had to reinvent itself to survive. Before coming to the building industry full-time in 1989, Scott served eight years with two consulting firms specializing in quality and process improvement in a wide variety of industries.

A former executive with Pulte Corporation where he launched their industry-leading quality initiatives in the 90’s. Scott is known for provocative quotes that challenge the industry status quo, such as “The only thing that buying on bid-price alone guarantees is that you will never operate by lowest total cost.” He was also among the first to recognize the substantial additional benefit that building lean also means building green.

Scott is a long-time judge of the National Housing Quality Award, has been a past examiner for the Malcolm Baldrige National Quality Award and has both undergraduate and graduate degrees from Miami University in Ohio. Scott was a student of acclaimed Quality guru Dr. W. Edwards Deming and credits Deming with providing the vision that even the most entrenched industries – and people – can learn, grow and change for the better.

Scott Sedam and his wife raised their large family in a converted barn in Novi, Michigan, built in 1828 by a veteran of the War of 1812 and signer of the first Michigan State Constitution. Scott regretfully reports that all calls to the builder for warranty service have gone unanswered.

“There is no substitute for knowledge” W Edwards Deming
“Imagination is more important than knowledge” Albert Einstein
“Knowledge + Imagination can solve any problem” Scott Sedam
ABOUT TRUENORTH DEVELOPMENT

TrueNorth Development was founded in 1997 by former Pulte Homes executive Scott Sedam to serve the growing developmental needs of the building industry. With professionals located across the U.S., TrueNorth has worked with more than 200 organizations in the United States, Canada, Mexico, Australia and New Zealand to improve quality and profitability. TrueNorth clients range in size from small local builders doing 25 units annually to some of the largest builders with annual production of thousands of homes. TrueNorth also works with leading industry manufacturers, suppliers and trade contractors. Scott Sedam’s monthly column appears in Professional Builder Magazine and he is a well-known speaker at industry events, company meetings and conferences.

Areas of expertise include:

- Lean Production / Lean Enterprise
- Lean Design / Lean Plan Workout
- Green building
- Operations Improvement Planning
- Survey & Analytical Tools
- Total Quality Improvement / Six Sigma
- Process Analysis & Improvement
- Organizational Development Strategies
- Problem Solving & and Prevention
- Customer Service Strategies & Systems
- Operations & Construction Management
- Community Management Teams
- Sales Training
- Sales Management Coaching
- Human Resource Essentials
- Partnering & Strategic Alliances
- Supply-chain Management
- Change Management
- “Supplier of Choice” strategies
- “Builder of Choice” strategies
- Team Development
- Custom Analytics
- Strategic Planning
- Custom Training

TrueNorth has the industry’s most extensive catalogue of over 30 coursework titles designed specifically for the building industry. Associates are located in Arizona, Colorado, New York and Michigan. All TrueNorth consultants and facilitators are professional presenters and have extensive building industry experience. TrueNorth clients have received more recognition from national quality and service award organizations than any other firm in the industry.

TrueNorth’s LeanWeek™ is an intensive, highly-structured, five-day process that involve suppliers and trade contractors with the builder to find, analyze are remove waste from product, process and plans. The results are improved product and margins for all parties, while reducing costs and enhancing relationships. The same principles are applied in LeanCompany™ by looking at internal waste, and LeanPlan Workout™ & LeanDesign Charrette™ that drive out design-induced waste. Over the past decade TrueNorth’s Lean initiatives have identified more than $250 million in savings across 185 implementations with more than 140 builders of all sizes and types in 5 countries.

For more information about how TrueNorth can help your organization achieve its goals, please contact us at 248.446.1275 or on the web at www.truen.com. You may reach Scott Sedam directly via email, scott@truen.com.

See Scott’s blog “The Lean Builder” at HousingZone.com

See Scott’s monthly article in Professional Builder magazine or online at HousingZone.com

Please join the Lean Building Group on Linked In

TRUE NORTH

248.446.1275  26030 PONTIAC TRAIL  SOUTH LYON, MI 48178  WWW.TUREN.COM