NEW HORIZONS FOUNDATION
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BUILDING A CULTURE OF CONTINUOUS IMPROVEMENT

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No, we have always been focused on improvement here, before and after the recession and into the future. We are a labor business; productivity is our lifeblood. (FMI NRCI panelist, Q4, 2013, in response to the question, "Since the recession began, have you changed your approach to productivity improvement? If so, how?")

Do you think improvement is a goal worth working toward? Most people in business, and, indeed, most people in general would affirm that improvement is by definition a good thing to achieve if you want to be successful in business. Many would also say that they try to improve—even if they don't always succeed—every day. Of course, there are those who would say they are trying but just can't seem to make any positive changes in their lives or their work. Likely, those people just haven't figured out how to make improvements. It isn't always a natural or innate skill. (This is why Americans spend billions of dollars on self-help books each year.) Most executive leaders in the construction industry recognize the need to improve their companies or organizations; it is their job to make this happen, after all. But it is not just a good thing to work on, as noted in the opening quote above, for contractors; "productivity is our lifeblood."

We occasionally read in the business news of a new CEO coming in to turn around a failing company, to "shake things up." Even when that approach works, it is a major disruption needed because a company is failing. Continuous improvement is an approach that can shake things up in a more positive light. Although we find that people are resistant to change, it is also true that change can make the job more interesting and productive; and employees like being involved in improving their jobs. The process of continuous improvement keeps the work fresh and results in productivity gains, most of which go straight to the bottom line. Ultimately, this approach avoids the need to one day call in a turnaround CEO if the company is constantly changing for the better.

Improving the bottom line requires making many improvements throughout the organization. Continuous improvement is not a process that catches on as the result of a memo. Imagine receiving a memo something like this:

To all staff:

As most of you are aware, our recent strategic planning session identified continuous improvement as one of our major focus areas for the coming year. Given this agenda, I hope you all will pick up the ball and run with it. The goal is 10% improvement overall, but we think we can do more than that. Areas for improvement include:

- *Reduction in labor costs*
- *Reduction in overhead*
- *Improve productivity by at least 10%*
- *Continuous quality improvement*
- *Upgrade the talent and skills of workforce*
- *Last but not least, we must continually improve safety*

To assure that we are making our goals, we will review our progress quarterly with reports delivered by each department head who will be held accountable for the results.

I look forward to a more profitable year with your help.

– The Boss

What is wrong with this approach? One of the first things you might notice is that the memo reads like an edict. That may not always be bad; there are times when the top executive must issue a strong message to the "troops." Certainly, the list of areas needing improvement is generally common to all contractors and most businesses in general. However, this message is completely vague as to how the goals are to be accomplished. It leaves that up to the individual receiving the message, and it is likely that most will follow the management style of the boss.

Let's assume that all those people are capable of acting on this edict. After all, it is clear their jobs might be on the line if no progress made. So what happens next? Each of the managers goes off and passes the message onto his or her staff—another edict—without coordinating with the other managers or making a plan for how to achieve the goals. These are signs of what has been called the "command and control" approach to management. There is no development of a common goal or a culture that would readily embrace an idea such as continuous improvement. Most of the people who do the work will see that memo as the "flavor of the day," expecting another such edict within the next couple of months about something else that will ignore the first memo and send everyone off in another direction. The reaction is, "Yeah, we heard that last year too."

In past surveys on construction productivity, we have learned that contractors are often unable to implement new ideas effectively. Continuous improvement for construction firms is not just focused on field productivity improvement; it is also continuous improvement for the whole company. However, due to the sheer numbers involved, productivity is one major area addressed in continuous improvement programs. Although "productivity is our lifeblood," improving it isn't just a reaction to an event like the recession. Important thought that may be, it is an ongoing activity,it is continuous. While the "big picture" areas of improvement listed in our memo above include important processes worth addressing, the memo appears to create a culture of uncertainty and even fear. Continuous improvement is first a cultural phenomenon and, for many, a big cultural change. A realistic program for continuous improvement creates a shared mission with input and responsibility from field labor and shop workers to office personnel and senior management. Achieving or building upon a shared goal and creating a culture of continuous improvement seems an unachievable task for those who have never had such a culture in their company. However, continuous improvement as a formal and achievable program has been used in practice for decades now, famously taught by Americans and adopted by Toyota after the World War II to rebuild the Japanese economy. The methods for achieving continuous improvement are known, and have been successfully applied, in the manufacturing sector for a long time. The question is, are these methods adaptable to the construction industry? Or is the construction industry such a special case that continuous improvement processes don't apply? The answers to these questions are, yes, the methods of continuous improvement like lean construction and kaizen blitzes can be used successfully in the construction industry. The construction industry is different in many ways to manufacturing, but not so different that it can't adapt continuous improvement methods successfully.

Bringing Continuous Improvement to Work in the Construction Industry

> *Training comment: "Some people have asked me if we get the employees in our training programs to sign an agreement or something in case, after learning what we teach them, they leave the company. I ask in return, what if we didn't train them and they stayed?"*

Training is often an important part of continuous improvement, but the example above has other parallels with implementing a continuous improvement program. What if you started a continuous improvement program and found that it was a significant investment to take people off the line for a day or even longer to work on CI? The response is, what if you didn't and nothing ever changed or improved in your company? Like a complex piece of equipment, an automobile or truck, for instance, if the maintenance is not taken care of, it won't be long before you have a broken down, worthless junker.

For those companies that have never taken a continuous improvement approach to make their operations run better, CI is a threat to the comfort zone. Companies may be very good at what they have always done and, as a result, workers become entrenched in one way to do things to get the results they have always achieved. However, over time, which could be months or years, a company will find that it has fallen behind the competition if it has not focused on making changes and improving processes and procedures in the organization. Bids are lost. Profit disappears. In addition, the best people don't want to work for a company that is falling behind. Then the executive owner wakes up one morning and decides, "We really need to work harder." "We need to sell more." "Everyone must be held accountable." Or, if really desperate, "I think it is time to sell the company." Employees get the vibes even if they don't get the message directly. Some have known for a long time that some things needed to change, but didn't want to rock the boat. Others just want to clock in, do their job and clock out. Change confuses them and makes them think more. Some of the best talent just left the company for another job. However, when it really is time to sell the company, it is easier to find buyers when the company is on the rise and well run.

These are the bleaker examples of what might happen if a company does not continue to improve, but they are realistic. While the realizations seem to come suddenly at times, the problems are often more subtle, like a long erosion of values or rust setting in to long-used processes.

Productivity Improvements Go Directly to the Bottom Line

The following examples of a simplified profit and loss statement show the difference a 10% improvement in field productivity can make to the bottom line. With labor in short supply in some markets and profitable sales harder to come by, continuous improvement for productivity can make the difference in profit growth even when volume remains the same. This is even more important when one considers that materials, equipment and labor costs are rising.

	Amount:	% of Sales
SALES	$5,000,000	100.00%
DIRECT COSTS		
Labor	**$2,000,000**	**40.00%**
Materials	$2,000,000	40.00%
Equipment	$175,000	3.50%
Subcontractors	$125,000	2.50%
TOTAL Direct Costs	$4,300,000	86.00%
Gross Profit	$700,000	14.00%
Overhead	$500,000	10.00%
NET PROFIT (before taxes)	**$200,000**	**4.00%**

	Amount:	% of Sales
SALES	$5,000,000	100.00%
DIRECT COSTS		
Labor	**$1,800,000**	**36.00%**
Materials	$2,000,000	40.00%
Equipment	$175,000	3.50%
Subcontractors	$125,000	2.50%
TOTAL Direct Costs	$4,100,000	82.00%
Gross Profit	$90,000	18.00%
Overhead	$500,000	10.00%
NET PROFIT (before taxes)	**$400,000**	**8.00%**

10% Improvement in Productivity = 100% Improvement in Profitability

One of the biggest points of resistance that contractors face when starting a formal continuous improvement program is, "We don't have time for that; we are busy and can't take anyone offline." Gregg Schoppman, a principal with FMI who focuses on productivity and project management, replies to such responses, saying:

> *Contractors find it hard to change, even when they want to. For one thing, they cannot just shut down and fix things. They tried that in the recession. It didn't work out very well for most, because those who knew they needed to make changes didn't have the capital or the work to make changes on. It must be an "as-you-go" process. "We're too busy" is not an excuse. Do you ever want to be un-busy?*

What does continuous improvement mean for construction firms?

So far, we have just focused on the problems faced by companies that don't focus on continuous improvement and the challenges faced by some who are focused on improvement. The phrase "continuous improvement" seems intuitive to everyone. However, as we use it in this paper and industry in general, it has a specific meaning as the name of an approach to improvement that has been known and used around the world for decades. In construction, continuous improvement is often associated with productivity improvement. However, it includes processes in the office or anywhere within the organization. It is for all of the

company. What are the major components of continuous improvement? The acronym often used is DMAIC:

1) **D**efine the problem.
2) **M**easure what needs to be measured to define, track and improve the problem.
3) **A**nalyze the data.
   i. To find the core cause(s) of the problem
   ii. Diagram the process
   iii. Model the value stream
4) **I**mprove the process.
5) **C**ontrol the process and measure results to assure the improvement is working as planned or discover if it needs further attention.

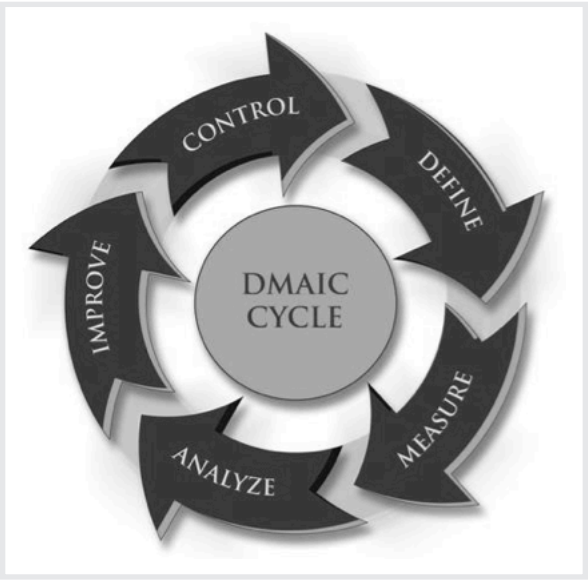
Although the process has some variations, at its core, it is straightforward. The New Horizons Foundation commissioned several reports describing specific tools and approaches to help its membership in the HVAC/sheet metal sector to get started with their own programs:

Related publications From the New Horizons Foundation

- "Kaizen Blitz: Significantly Improving Performance in a Week or Less" New Horizons Foundation, prepared by Larry Swanson, Work Competition Consultants, 2009
- "Thinking Lean—Tools for Decreasing Costs and Increasing Profits" New Horizons Foundation, prepared by Dennis Sowards, Quality Support Services, Inc., 2008
- "Lean Production Principles" New Horizons Foundation, prepared by Dennis Sowards, Quality Support Services, Inc. (2004)

Each of the above reports offers specific steps and explanations of important components of continuous improvement as it could be employed in the construction industry. Below, we offer an overview of CI as well as a look at some successful examples in use today.

Figure 1: Continuous Improvement Model



Interview with James R. Myers, Vice President of Sales, Sheet Metal Connectors, Inc., Minneapolis, Minn.

Company background:

Founded in 1969, Sheet Metal Connectors, Inc. is a fabricator of standard and custom commercial and industrial sheet metal products. A yellow label union shop, Sheet Metal Connectors, Inc. supplies a wide range of sheet metal products, including, but not limited to, ductwork, spiral pipe, fittings, custom welding, dieform elbows, slips and drives, oval pipe etc.

Getting Started

Sheet Metal Connectors employs approximately 150 employees and is strictly a fabrication shop with contractor customers around the states. It has had a continuous improvement plan in place for five years, starting with a New Horizons Foundation program on Kaizen and bringing in people from Lennox to help Sheet Metal Connectors get their program off the ground.

According to Myers, there was very little pushback to the process when the company started its training and first Kaizen blitz. "Buy-in may have been easier, because the initiative was started in the midst of the recession at around the time we were having to make necessary layoffs."

Organizations starting a continuous improvement program find it hard to get past the "dollars" as calculated in taking people offline for a time to work on the solution, implement it, etc. However, as Myers explains:

> *Anyone with a shop must do this. In the shop, it might be easier to make the changes, because there are more standard processes that can be improved and stay that way for some time. Nothing that is changed lasts forever. Processes must be reviewed from time to time to keep them fresh and up-to-date.*
>
> *As an example of one of our Kaizen blitzes: In the welding department, we assembled a Kaizen team to improve productivity. First, we went through the shop and cleaned up everything. Then we went to the team and asked them what was wrong with productivity in this department? Once they observed the workflow, they came up with solutions, many of which had to do with standardizing equipment and workflow. For instance, we found we had a number of different-sized welding benches that made it different to work in each area, so we standardized welding benches. Ultimately, we not only improved productivity, but also we made the area safer.*

Myers explains that, "No department is off limits to the process." The company has formed Kaizen blitz teams for inventory review, staging and quotation processes.

They have also done this for marketing to help get more work in the door.

The continued improvement process is a companywide initiative. Myers says that everyone received a half-day of training he calls "goal post" training. While the program has been well-received by most in the company, there are some "who just don't get it." They are usually people who have done the same thing the same way for many years. Although they may be good at that job, they aren't receptive to change.

Usually, there are six people on a team, some of whom work in or with the process under review. We also include some members of the team outside of the process to get an objective point of view. Most of the people on the team have never had the opportunity to participate in decisions in this fashion before, and they like having their opinions heard. When it is time to make recommendations, everyone on the team presents his or her findings and ideas to the upper management team. For some, this is the hardest part of the process, because they have never had to speak or make public presentations. That is also a learning opportunity.

Measurement plays a big part in continuous improvement, and Myers says they do measure some areas in the process, like setup time for work, but other things like safety prevention are more difficult to measure. The measurement for safety improvements is often that danger was prevented, but not all areas improved had serious accidents before being improved. It is just that they are even safer now.

The success of a continuous improvement program depends largely on changing the culture of an organization. "We have to change the mentality from putting out fires to taking preventive measures. We encourage people to participate." What are the rewards? For one thing, participants get recognition for their work. They also take pride in what they have done. For instance, Myers notes, "We have had well-paid journeymen sheet metal workers painting their work areas. Although that might not seem to be the best use of their talents and pay grade, they take more pride in their workstations now."

Continuous means that things aren't just reviewed once and that's it. "We have even had a Kaizen session on past Kaizens to review how we have done with the process," Myers reports.

One thing a continuous improvement program does is to put more planning into every process. That's where Myers can see the process helping contractors. Of course, there are some assemblies that Sheet Metal Connectors builds for construction projects that require long lead times due to their size and complexity. But, other times, it seems that contractors don't think further ahead than a day or two, and things get rushed. While working on a jobsite may not have the same amount of repeatability or standardization as processes in the shop have, Myers thinks there are many areas that would benefit from continuous improvement methods. He also notes that he has heard comments on the cost of the process, especially hiring consultants and taking workers offline. In lean times, everyone notices the cost, but Myers can tell those who are reluctant to tye continuous improvement that those costs often pale in comparison to not doing it and losing money on poor production or lost-time accidents. The safety part is easier to understand, since everyone is concerned with being able to go home each night without injuries on the job. For continuous improvement, it means that everyone contributes to doing his or her job better, and that means being more competitive and profitable in the end.

Myers believes that starting a continuous improvement program may be more difficult for very small companies, even if there are significant benefits to be gained. If the company has to take anyone offline to be on the Kaizen team, it reduces a large percentage of available man-hours. Whatever the size of the company, the process requires a positive attitude to make it work and keep it working.

Sheet Metal Connectors started the continuous improvement process in difficult times, just as the economy started to fall apart. The program was likely accepted faster, because no one wanted to rock the boat in the face of difficult layoffs. Myers says if they were busier, it would have been tougher to convince everyone of the need to stop and improve things. He thinks of the work as laying the bedrock for when they would eventually get busier, although, for some changes, it would be better to have more of that type of work in-house to get even greater benefit from the changes made. Now, even though business may be better,

the continuous improvement mentality continues. As Myers' notes, during the recession the pressures on low price grew fierce, but he doesn't expect that to change much even when work gets better. So, for those companies that say, "I'm just a little guy. This won't work for us," or, "the cost in lost time is too great," expect those companies to find that they become less competitive over time in a highly competitive market that is changing all of the time.

Putting Continuous Improvement in Practice for Contractors

According to Gregg Schoppman, FMI Corporation, very few contractors are using a formal continuous improvement process at this time. When contractors have a problem or need to fix something they think is wrong, they will often call in a third-party resource. Larger companies may have someone in-house in charge of a continuous improvement process, but often they are really training managers, and training, while important in continuous improvement, is often used as a disguise for real continuous improvement. As mentioned by Jim Myers in our sidebar, smaller companies may find continuous improvement much harder to do. They just don't have the people or the training needed to work on it. However, they have the same needs to continuously improve their procedures and processes just as they need to keep up with safe working practices. Continuous improvement is scalable, and smaller companies usually have fewer people to train and work on fewer different types of projects.

Continuous Improvement Is First a Philosophy and a Cultural Change

The key to establishing a continuous improvement philosophy and approach in construction is the culture. Continuous improvement requires a culture of change. You won't find this naturally existing in most construction companies. This is driven from the top leadership down and continuously reinforced. There is not continuous improvement without a change in the culture of the organization. It requires an investment in time and money as well as a willingness to change old habits and ideas. It is a change that is made for the long term. To improve a process, one must decide on a course of action, implement it, measure it, do it again then measure it again, and so on. It is not a one-time, short-term approach that is over soon after the initiative begins.

Lean construction, Kaizen blitz, Continuous Improvement and TQM. Are they really all the same, just using different names?

Lean construction, Kaizen blitz, continuous Improvement and TQM are all related concepts and practices, but they are not all the same. At the bottom of it all is what has been taught and practiced for many years. Identify the problem, measure it, analyze the results, make changes implement, and control the process. Then do it repeatedly. It's not rocket science, but it can be hard to get it going. Lean construction is focused on labor and materials movement or deployment, inventories and the like. It is an operations philosophy. A Kaizen blitz is the implementation of a continuous improvement approach that focuses deeply over a short period on a particular problem.

It is usually used for smaller problems or work processes. Total Quality Management (TQM) and Six Sigma are relatively older terms for what companies should still be doing, continually measuring and fixing processes to improve those processes.

Each of these different terms and manifestations of continuous improvement has had its time in the news and books on business management, but, while the headline "flavor of the day" for each passes out of the news, Kaizen, TQM and Six Sigma haven't gone away; they have just become part of the what companies do to improve their processes. Continuously. Nor has each of the different aspects of the process remained the same. Some have combined and been refined. Many of the terms like Kaizen are Japanese, because that is where they have been developed, starting with Toyota with the help of American expertise. They are just recently being employed by companies in the construction industry.

What contactors have done to improve safety is the best example of continuous improvement. However, whereas a company might post safety records on the lunchroom walls and on the job site, it is reticent to do the same with such as material handling statistics, lost time due to rework or a comparison of the number of items on the punch list at the end of projects. That is the sort of thing it must get over in order to start a continuous improvement culture. Unfortunately, contractors have many excuses not to do these things, yet these changes are imperative for starting a continuous improvement culture. Everyone must be aware of the measurements and the results. It demonstrates commitment to everyone.

How to Get a Continuous Improvement Program Started

Once a company decides it is ready to make the leap toward a formal continuous improvement initiative, there are several steps to go through before getting the process up and working.

Evaluation

The evaluation process often starts with a business evaluation. According to Schoppman:

> *This is where we look at the whole company and determine what's working and what is not working. We are looking for the major pain points that slow down production whether in the field or in the office. Then we dig deeper on the major pain points. Larger companies may have professionals on staff that can take on this analysis, but often they bring in someone from outside the company who has an objective point of view. That also helps to prevent the appearance of bias in some cases.*

Prioritizing

The evaluation stage will always come up with multiple areas with processes and procedures to work on. It is important to realize that a company can't work on everything at once. Often it would seem the obvious place to start improving would be the problem area that causes the most pain, the most loss of productivity or largest personnel issues, etc. However, success breeds success. The initial continuous improvement project should be one that is doable in a short time. That way you do not overload the system early on, and the effort becomes a failure like the flavor of the day. "Today we have productivity. We will increase productivity by 10%." That is more like the old or traditional way of the command

approach. The boss says we need to improve productivity, and everyone is left to figure out what that means on his or her own. That leads to everyone doing his own thing with no standards or accountability. As everyone who has gone through this approach knows, it doesn't work; or, if it does work, the change is transitory. With continuous improvement, we are looking for lasting change. We seek to change the culture.

Appointing an Implementation Team

Once the items to work on have been prioritized, it is time to select an implementation team. While it is important that everyone knows that top management supports the initiative, the implementation team must include people involved in the target problem's process. This group will brainstorm and come up with a solution and a plan for change. The key to that plan is deciding how the company or team will know if the solution is working. That will require measurements of the problem area under study before and after changes are made. It is imperative to also track the change ongoing so success can be monitored over time and later improved as necessary. Measurements help to let people know how they are doing. For instance, all those involved, including the workforce, can see the statistics in graphic form. That way it is easy to see that 20 units were installed this week, which is 25% more than the average last week. Supporting statistics will show how that was achieved, for instance, material was delivered on time to the right place 80% of the time, which is better or worse than the previous measurement.

Implement and Measure

Once the plan and people are in place, it is important to roll out the changes needed to implement the plan with a positive attitude and good communications to everyone in the company. The plan may include a training session, so there must be decisions as to who will be trained and when they will be trained, etc. Maybe a training program needs to be developed, that process must also be done in proper sequence. The goal of everyone is to make the solution work or know why it isn't working through measurements, accountability and control. Often, this is the stage where contractors fail. It is difficult to make changes, and one of the biggest difficulties is getting everyone on the same page, standardizing processes and not making exceptions for individuals who would rather do it their way, even if they are good workers. If the team is not serious and vigilant about the process, measurements and reviews, all of the above is a lost effort.

To assure the continuous improvement program is ongoing and refreshed, it is important to keep measuring the process and occasionally go back and update areas already worked on, as Myers mentions in the sidebar, "We have even had a Kaizen session on past Kaizens." Schoppman notes as an example that he conducted a review of a client's process where it had some years ago instituted short-interval planning in which, every week a plan is developed on all jobs covering the next two weeks addressing the labor, equipment, subcontractors and material resources needed during that time to meet the schedule. The process was revisited and, in this case, it was noted that the business had changed over the years. The company had entered new markets, for instance. So, it conducted a thorough review that resulted in making modest modifications to the process to accommodate changes in markets served, etc.

It is easy for companies to accept measurements out of the target zone as anomalies. That's why they need to keep measuring and not overlook changes in results.

Safety is often a prime example of continuous improvement in the construction industry. Most companies measure it and track it diligently. In the case of safety, contractors are more like manufacturers, where the idea of continuous improvement has been working for many years now. Somehow, because it is easier to see the value to saving life and limb, safety is easier to get contractors to work on continuously. They all know their modification numbers, incident rates, etc. They measure these things diligently, have training programs and invest in it. When results are outside of parameters, they find out what the problems are. This is not the case with other processes and procedures in the construction industry. Examples of problem areas include:

- No support from the top of the organization
- Insufficient training or the wrong training
- No standardization

Contractors are especially deficient in the control part of the continuous improvement process. For most of the following reasons:

- It is harder to do and requires real discipline
- They don't hold people accountable
- They need to be more proactive rather than reactive
- They must practice continuous reinforcement
- Everyone must work to the same standards

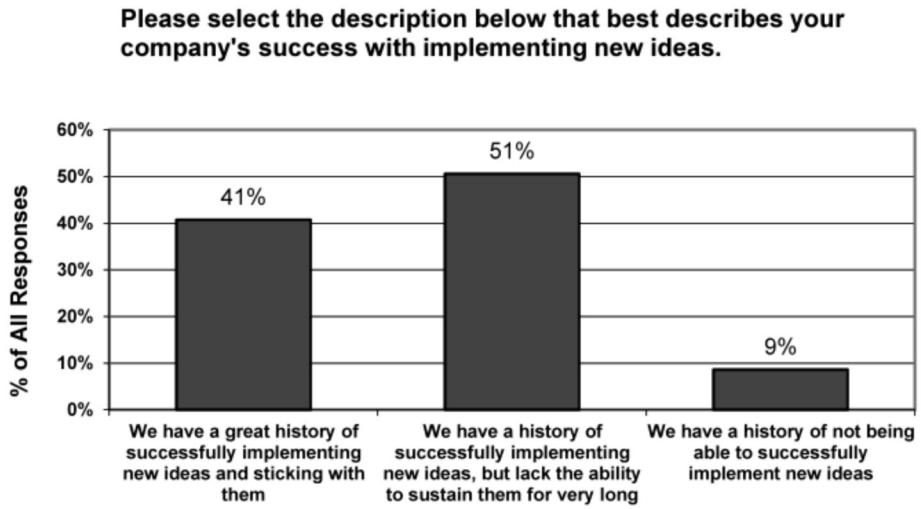
For instance, if you go to a McDonald's in Albany, N.Y. or Spokane, Wash., you will see the same menu, and you can expect the same level of quality. It is not an option for different stores to make up their own menus.

Reasons Continuous Improvement Efforts Fail: Excuses

Starting to instill a continuous improvement culture works best when the company is busy. Once the team has gone through the process of identifying, measuring and analyzing, it is difficult to get to the controlling or implementing stage if there are no projects to try it on. We recommend beta testing or finding a "pilot" project. It seems trite, considering how often we may say it, but the top managers of the company must work both "on" the company as well as "in" the company. The alternative is to keep doing what you're doing, or stay with the devil you know rather than try something new. Likely, you will get the same results you wanted to fix. The worst thing to do is start a continuous improvement program and then stop it before it has had a chance to work. That just adds to the attitude of, "Here we go again, another big idea that won't last long." Other than just FMI's experience working with contractors, in the past, we have asked contractors to describe their success with implementing new ideas. The results are often disappointing, as in the graph below from FMI's Construction Industry Productivity Survey. Only 41% had a great history of implementing new ideas and sticking with them. Actually, that seems high from our experience working with contractors.

Starting a continuous improvement program and keeping it going to the point of creating a continuous improvement culture takes work and commitment. Many companies in manufacturing and other industries like pharmaceuticals have been using this approach for years. The key to success is recognizing that it isn't just a mechanical and statistical process; it is a work in modifying human behavior. Without such efforts, you are encouraging more bad habits as the standard and accepting less than your best performance.

From "FMI Construction Industry Productivity Survey"

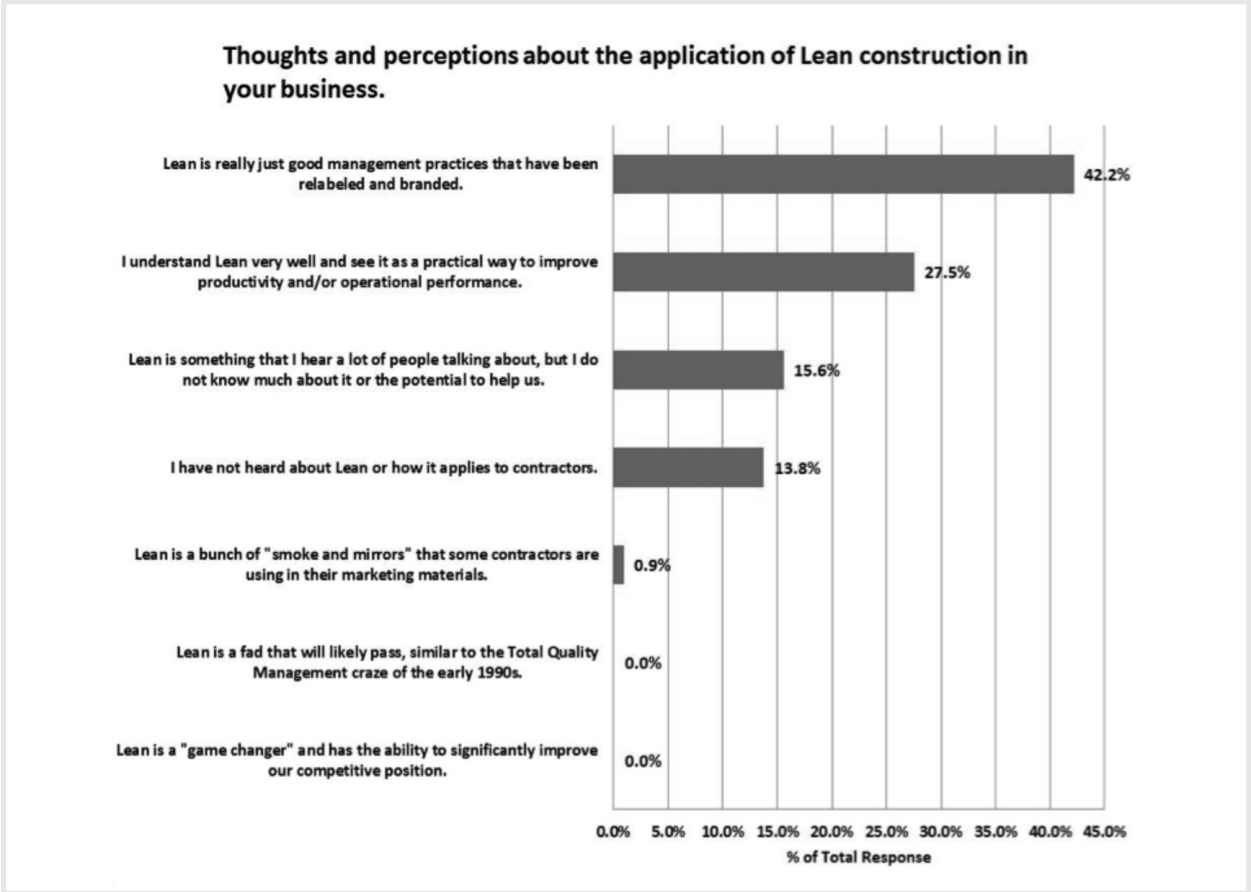


Is There a Trend for More Companies Adopting a Continuous Improvement Philosophy?

On one hand, there is always a trend for improvement, but most contractors wait until there is an emergency before they try to make changes. They seem to have a reactive mindset and sometimes may even boast about their ability to "put out fires." When problems occur, they tend to look at them as anomalies and find excuses to explain that it won't happen on the next job. They lack a long-term outlook and the idea that having *no problems* on the job is the goal. However, if we think again about safety, one area that has improved greatly over the years, these same attitudes are unacceptable. A reactive mindset doesn't work very well in safety matters. The focus is on preventive actions, such as hard hats, harnesses, training, standards and engineering reviews. The laws and penalties, not to mention the staff and financial implications, are too great to ignore. There are no laws that say that the right personnel and materials need to be in the right place at the right time in order to keep to the schedule unless the company makes them for themselves. That is, no law but the laws of economics.

Although the concept of continuous improvement has been around for many years, its proper application is not a trend in the construction industry. However, we see some increasing interest in Lean construction, as noted in our most recent productivity survey:

From "The FMI 2012 U.S. Construction Industry Productivity Survey" report



Conclusion

Those companies that have begun to follow Lean construction practices, Kaizen and other continuous improvement efforts are beginning to see a difference in performance. Lean is really just a part of a total continuous improvement program and culture. Call it what you will, there is always room in business for improvement. In fact, the markets demand it and competition drives it. Why would anyone hire a hundred men to dig a foundation these days when we have heavy machinery that can do the same work a lot faster and better? It took a while for heavy equipment to replace the shovel or power tools to replace hammer and saw, but the world is changing faster than that now. New technologies, processes and ideas are needed to remain competitive. A culture of continuous improvement welcomes those ideas. If it is not a trend in construction at this time, it needs to be part of the "next big thing." Continuous improvement is the path to the next generation of best practices and improved performance.