LEAN LEADERSHIP

- Lessons from Master Practitioners

Real stories about developing and sustaining
a culture of continuous improvement.
Compiled by the
Manufacturers Alliance association.

Kirby Sneen and Art Sneen have toured and evaluated thousands of manufacturing plants. In the process, they have assembled the best continuous improvement lessons learned from the collective wisdom of their industry peers on what has worked, what has not, and why. This book includes best practices from proven practitioners that will launch, accelerate and sustain your improvement journey – no matter where you are along the way – or the type of industry, whether you are large or small, or in charge of one department or a global enterprise.

Lean Leadership -

Lessons from Master Practitioners

- **Vital Steps to Creating a Culture of Continuous Improvement**
- **Key Points to Sustaining the Improvement Momentum**
- **Fatal Mistakes to Avoid**

Compiled by **Kirby Sneen** and **Art Sneen**
Contributions are from master practitioners:

Chris Shimek
Dave Deal
Melissa Sawin
Brian Swanson
Didier Rabino
Tim Keran

Art and Kirby Sneen are a father and son team from the Manufacturers Alliance, an association of hundreds of all types of manufacturers. Together they and their peers share training, education and benchmarking that inspire manufacturers to continuously grow and improve. They have always used a practical approach to learning: It sticks best when you learn simple truths through experience from experienced peer practitioners.

"'*Lean Leadership – Lessons from Master Practitioners' is an engaging book about people. It is people that make Continuous Improvement both necessary and possible. Each section provides*

first-hand examples of Lean Leadership. The leaders in this book draw upon the depth and breadth of their experience to illustrate the importance of understanding the people that are part of your business model...including yourself. Although the tools and concepts of Continuous Improvement are fairly discrete and therefore rather simple, people are complex. There is inherent variability between any two individuals. Therefore, the understanding and application of these tools and concepts will vary from person to person and business to business. The key is to attenuate the frequency and amplitude of the variability as appropriate for your business…thereby creating a steady stream of improvements and meaningful results. This is not easy. It takes preparation and hard work. However, the insights provided by the master practitioners featured in this book should help the reader eliminate much of the waste along the way. Use the lessons and examples shared in this book to engage, educate, and empower yourself as well as the people you are privileged to interact with."

Robert St. Louis
Director of Operations
MGK

"*The stories of Lean Leadership offer a simple, concise and practical guide that articulates the continuous improvement foundation that is needed to create and drive a high performing enterprise*"

Dean Jablonsky
VP, Global Enterprise Excellence
Boston Scientific

"As a member of Manufacturers Alliance, my team and I have benefited and witnessed countless examples of peer to peer learning. In reading this eBook I am again reminded how encompassing, challenging, and rewarding the continuous improvement journey is and how appreciative I am that people share their learnings. Each leader here has provided nuggets of wisdom succinctly stated, which can be incredibly rewarding when applied."

Todd Roth
Vice President
Core Publishing Solutions
Thomson Reuters

"In reading through Lean Leadership, the commitment Manufacturers Alliance has made to our industry is matched only by the many contributors' passion for Continuous Improvement."

Gregory A. Heinemann
Chief Executive Officer
Metro Mold

"This book contains valuable information from Twin Cities' business leaders who are walking the talk."

Kelly Pearson
Director of Operations, Shakopee
The Toro Company

"Congratulations to the MN Manufacturers Alliance on the completion of this project. My philosophy is that the most important role of the leader is the stewardship of the enterprise; to create an enduring organization that is stronger and more resilient than when one took the helm. In an era of increasing globalization and ever-accelerating change, greater efficiency and improved effectiveness are not optional. This collection of stories captures the spirit of the 'Alliance; peer leaders sharing their hard-won wisdom in the never-ending journey of continuous improvement."

Bill Gray
President
Uponor North America

"I took a look and was VERY impressed with the content and overall idea here."

Brian Dumke
Director, Operations
Abbott
St. Jude Medical is now Abbott.

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Forward

Kirby Sneen, Manufacturers Alliance

Welcome to an accounting of best practices and lessons learned from your peers. Welcome to a community of successful manufacturing practitioners sharing their experiences and stories that will guide you at any stage in your improvement journey. Welcome to the endless pursuit of perfection regardless of the size or complexity of your business. Welcome to inspiration and practical experience from master practitioners that will motivate you. Welcome to a book compiled by a father and son team from the Manufacturers Alliance who have worked in, benchmarked, toured and critiqued thousands of manufacturing companies. Welcome to our new book *Lean Leader*ship – *Lessons from Master Practitioners.*

This book is about creating and sustaining a culture of Continuous Improvement (CI). Our response to the frequent question: "How do we create a culture of continuous improvement?" is to look outside your four walls and leverage the experience of peers. In *Lean Leaders,* we have included experiences that outline critical steps that are most applicable for any company. These steps come from a variety of manufacturers who are small and large, engineer-to-order and make-to-stock, local and international, and from just about every type of manufacturing industry imaginable.

When someone first shared with me the idea of "creativity before capital," I knew accomplishing it would be an uphill battle. *Lean Leader*ship – *Lessons from Master Practitioners* is about the end game of creating an army of creative problem solvers. Every manager is tasked with being a good steward of their people, time and budget. Ultimately, they would like to be able to invest in their teams to learn to solve problems, so they get to the root cause, and the problem does not come back. Therein lays one of many challenges: How do you come up with creative ideas to solve what are likely complex problems? How do you develop a critical mass of problem solvers? You will find multiple perspectives that help answer these questions and more as we highlight stories that accelerate the adoption of Continuous Improvement principles.

Lean Leadership draws on the valuable resources of a local Twin City association, the *Manufacturers Alliance*. This thriving community of several hundred manufacturers routinely shares education, training, and benchmarking peer to peer. This book illustrates the association's 25-year effort to seek win-win scenarios for the entire manufacturing community. Please enjoy the candid stories your peers have written and the lessons learned they represent. Perhaps you will find the inspiration after reading *Lean Leader*ship to share your own story so that our community of manufacturers will continue to learn from what works, what does not and why. Practice trumps theory!

Introduction

Art Sneen, Manufacturers Alliance

Chances are that you are reading this book for selfish reasons. That is - you likely want yourself and your organization to grow and improve. There must be thousands of ways to do that. This collection of experiences is about acquiring an attitude that seeks to continually improve in all possible ways. Yes, it often draws on experiences with Lean Manufacturing. However, the principles apply very broadly to all types of businesses and organizations.

So, what is "Continuous Improvement" or "CI" anyway? It is like the elephant that appears differently close up, depending on which direction you look at it.

Continuous Improvement includes many popular improvement disciplines such as: Six Sigma, Theory of Constraints (TOC), and ISO 9000 (Quality Standards), just to name a few. There are staunch advocates and many consultants for each of these systems. Therefore, in one sense they compete for dominance. But, here they play nicely together and can integrate well – all under the umbrella of Continuous Improvement.

It is important to emphasize that this book describes "systems" that impact people's "behaviors" that result in a "culture" shift to one which continually seeks to improve on all fronts.

One consequence is often referred to as an "engaged" workforce. Engaged workers want to be involved in improving their workplace. Good things then begin to happen more continually. That means the rewards are worth the effort. Positive operational and financial results follow. This is not an empty promise.

The practitioners in this book have lived it. Fortunately, they are willing to take time out from leading to share their stories for your benefit. So, read on. You will want to thank them!

Section 1 – Creating a Culture of Continuous Improvement

Chapter 1

What to Do and What Not to Do When Building a Lean Culture

Christopher J. Shimek, is a Senior Business, Manufacturing, Operations & Lean Process COO, SVP of Operations and General Manager known for developing the right culture, securing the right talent and exceeding results. 25 years of experience in business strategy and execution leading growing, startup/early stage, cutting edge and entrepreneurial organizations in growth, sustained, turnaround and restructuring phases.

With a focus on integrity, honesty, people development and strategy, Chris has a track record in delivering immediate and high-impact results overcoming diverse business, customer, product, supply chain, channel, infrastructure, and leadership obstacles. He employs a hands-on implementation approach across strategic business/sales/operational planning, integrations/reorganizations, P&L/EBITDA improvements, vendor/customer/SKU optimization, contract negotiations, new product, process & business innovation, strategic channel management, and ERP implementations and recruiting/developing top leadership talent.

Chris is a Lean expert (led/managed two facilities which received Shingo Prize for Excellence in Manufacturing). He has installed ISO 9000 quality management systems and one SQF Level 2 Quality Management system for consumer durable goods and food manufacturing companies. He possesses a vast knowledge of Lean, DMAIC, Shingo, ISO, Kaizen, Kanban, 5S and PDCA Methodologies and standards.

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It is of vital importance to know what *To Do* when building and sustaining a lean culture. It is equally important, and in some cases, even more important to know *What Not to Do* when building a lean culture. Much can be learned from history. History should be studied, observed and acted on.

The lessons learned over time and observation can and will save you time, money, and agony. In this chapter we will share some firsthand experiences, results and learnings on what *To Do* and *What Not to Do* when building and sustaining a lean culture. I will share some personal experiences and results that give you guidance on your journey to successfully lead, build and sustain a lean culture!

To Do and What Not to Do – Eight (8) Key Life Learnings

1. **Tone at the top** – Lead by example and demonstrate commitment
    - Be the steady and stable rudder
    - Phil Mercer story
2. **Focus on the positives** – opportunities, not problems
    - Reward and recognize identified opportunities
3. **Leverage your learnings**
    - Lyons story
4. **Have a bias for action and a sense of urgency**
    - Make decisions and learn from them – 10 decisions a day
5. **Reinforce the fact that the only constant is change**
    - Lake City - a new culture.
6. **Jump in with both feet, commit to it, and stay the course**
    - SDG group / Cortez
7. **Just do it, process gets results, speak with data**
8. **Measurement** – Be careful what you wish for
    - What gets measured gets done
    - BSC – Balanced Score Card

It is almost as important to know *what not to do* as it is to know *what to do*. In the case of building a strong and sustainable lean culture, one must lead with commitment and conviction. One must stay focused, and be consistent and predictable. Always remember, people cannot follow if you are not leading. To lead you have to have a clear vision that is understood and that can be supported and achievable.

1. Tone at the top – lead by example and demonstrate commitment

- Be the steady and stable rudder - the Phil Mercer story

I learned a valuable lesson in leadership while enduring the most devastating blow during our growth years in a family business at Heat-N-Glo Fireplaces, later known as Hearth and Home Technologies, after being purchased by HON Industries. The United States new home starts fell from 2.1 million per year to 430,000 and we were forced to make corrections. During this time things were very cut throat, and downsizing was not only an everyday word - it was an everyday action to be taken. We were no different. The tough decisions were being made and chaos was everywhere. During this time our $200 million dollar distribution business that was comprised of 33 locations in 13 states and was led by a man named Phil Mercer. Phil was an ass-kicking, hardnosed, driving leader that always drove the hardest bargain and worked his people to the nth degree. He was respected as a leader and known to be the hardest guy to ever work for - but always was a winner. A guy you admired, despite the fact that he drove you into the ground in his pursuit of excellence.

During the residential construction crash he was as calm as a cucumber. Cuts were taking place all around him and he himself was taking action, but it was not knee jerk. Phil was slowly, methodically and calmly analyzing things, visiting with his people and walking in the GEMBA, new home construction sites, where fireplaces were being installed - or at this time were sitting

idle. I watched and observed this as we were frantically shutting down remote distribution centers and factories in an effort to remain competitive and solvent. It was chaos in our world. Yet this guy, Phil Mercer, was walking his business and visiting with his people - doing nothing but being a positive cheerleader. I didn't understand it, and finally got a chance to visit with Phil. My first questions were of course "What is it that you know that the rest of us don't and why is it that you can remain so calm, so even keel and so relaxed during this huge storm."

His reply was simple, but profound: "Chris, in the eye of the storm the captain has to be cool, calm and collected. His crew *needs a stable and steady rudder*. Now is not the time to beat on the troops and drive action. Now is the time to support and coach them through. We will worry about performance after we survive, and we will need our crew to re-build. We need them well rested and ready to dig out of the mess that we will have. Be a leader not a driver right now. Show empathy and show leadership, share with them a vision of a brighter future beyond the mess we are in and they will follow and more importantly they will pull us through this. Once the ship has been righted and our sails again have wind, then we will be able to drive performance and drive results. But, right now we need to lead them through this."

This was a lesson of *Tone at the Top* for me and I have carried it with me since the day I conversed with Phil. It is one of the most important foundations of the right culture.

2. **Focus on the positives** – opportunities - not problems
    - Reward and recognize identified opportunities

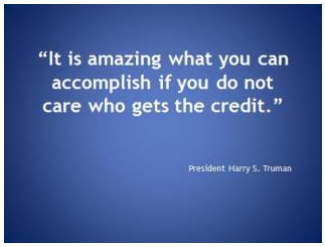
Many times in our daily work we find things that are not correct, for lack of a better term, they are screwed up. Many managers jump on this and look to blame or to judge those who have made it this way or those who have allowed this to persist. It is human nature and we all want to complain about it rather than do the heavy lifting to correct it. Sorry, but this too is the wrong way to view it. I had a boss that sat in a presentation one day after we had been working in the GEMBA – on the shop floor with a cross-functional group of six people for five days during a Kaizen event. As many of you know there are some very standard and predictable phases of teaming that always take place during these events. They are:

- Storming
- Norming
- Forming
- Performing

Frankly, in this particular event we never made it past the storming stage and the week was a disaster from my perspective. We ended up finding more wrong than we could handle, and the scope of the project was far too large for us to be successful. The end result was us standing in front of the company during our report out and admitting to the company that we never got past

the current state assessment and here are all the issues with current state! Our results worksheet showed us going backwards and our recommendation was to give it one to two more weeks of time with the same group because we really had not accomplished anything in our minds.

The company sat in utter disbelief; mouths wide open, looking at us and at my boss, who was also the president of the company and a professional at Kaizen, to see how he would respond. I too was curious since this, in my mind, was a huge waste of time and money and ultimately nothing but a failure - with my name on it. His response was the following: He clapped his hands, he smiled and he said to the whole company: "now we are getting somewhere! This group openly admitted we have tons of opportunities, and they now understand how to work the problem. We are going to let them focus on this for the next two weeks and I look forward to the report out!" *He celebrated the identified opportunities and he demonstrated a commitment to the process.* If you do not fully understand current state and if you do not have a baseline you cannot Kaizen – i.e., make good change.



He later coached me that, next time, let's "fail faster and move forward faster," but none the less he taught us all a huge lesson. The "problems" are not problems, they are OPPORTUNITIES that need to be identified and celebrated - and then we can make positive change.

3. Leverage your learnings

During my watch we had a Consumer Products Safety Commission recall. At the time, I was one year into a new role, a "staff role" - Director of Quality Assurance, and I was responsible for all reliability testing and new product quality assurance. Unfortunately, during this time period the head of R&D had a lapse in judgement and bypassed a reliability protocol that resulted in us putting some suspect product in the field. In two instances, these failures resulted in houses burning to the ground! The problem was with a gas train that was not fully tested in all of the five operating modes. In a very rare sequence of operation, if all the constellations were aligned, it was catastrophic. Long story short, this oversight cost the company two and half years of time, $2.5 million in costs to recover and replace, and much more than that in customer ill will and brand damage. Needless to say, I was in the hot seat and so too was our head of R&D, a close friend of mine, that I had worked with for more than ten years. Upon learning of our issue and the potential costs, my boss invited the two of us to his office for a "debriefing." At the time, I suspected this was a "pink slip meeting" for sure and both of us would soon be cleaning up our resumes and looking for new assignments.

The discussion went something like this: Do you two know what you cost the company!?! Do you know how this will be perceived in the industry!?! Do you know what is at stake!?! Did you knowingly bypass a protocol we had in place? Guys, I really don't know what I should do with both of you!!! I need to hear from each of you why it *might* be a good idea for the company to keep you. The two of us fumbled around for about three and a half minutes trying to find a good reason or two - not really knowing if he wanted to hear anything, or if he simply was so mad that

he could not do anything but put us on the pulpit while he caught his breath for round two. Fortunately, he took a few deep breathes and finally sent the head of R&D out and said he would get back to him by week's end. Unfortunately, I got to stay for round two - and then the life lesson on top of it. His comments to me were a repeat of round one followed by – this is on your watch, you are ultimately responsible for what has happened here. I have no choice but to take action, Chris! Do you know what I am going to do? I had no answer, the silence lasted for what seemed to be eternity and then he said – I am going to keep both of you. You will clean this mess up over the next two to three years and we will recall all 5,752 units and account for every serial number. Your colleague will help you and he will go forward and train all our engineers on the importance of process and process discipline. Then the life lesson: "*I will be damned if anyone else in this industry is going to benefit from the $5.0 million education this company is giving you two monkeys. I am certain this will never happen again on your watch or on his.*" He was smart enough and patient enough to see it was a sunk cost and the only benefit in it was to carry the "monkeys" he had invested in. Again a lesson in leadership – leverage your learnings. It was a validation of what my father was always preaching – Christopher, fail fast and learn from it!

4. Have a bias for action and a sense of urgency

- Make decisions and learn from them – 10 decisions a day

My father was a great guy, a smart one too with more than a hundred patents to his name when he passed away. He always preached 'hire decision makers – they will add value'. His theory was that you will hire smart guys and gals and they will rarely make a bad decision because they are smart. Make ten decisions a day, and because you are smart, you will get seven of the ten correct and move forward. Two of the remaining three probably did not matter which way you went, and making a decision either way moved you forward and closer to learning more. *The last one – you may get it wrong, but if you do, you have learned a valuable lesson: that was not the right decision. The next time, you will look at things differently.* On top of that, if it was wrong – you can back up and adjust to what you have previously learned and move forward. In today's world where change is accelerating every day, this is even more valuable and true: you have to make decisions and you have to move forward!

5. Reinforce the fact that the only constant is change

- Lake City - a new culture

Lake City was my first plant manager assignment, I learned a great deal there because I had to. We bought the building in October of 1991. I went there fresh out of graduate school. I "had this" – after all, how hard could it be? I have read the text books and grown up in the family business. Little did I know they had dumped ninety semi-loads of material into the building with no plan, no computer system, no phones and no prints. This was a text book example of everything you should **not** do, and we were doing it! There were 31 employees in the building, two of them from our plant in Savage, MN. They would queue up parts by visual recognition and we were building 53 fireplaces per week when I walked in. Change was coming whether we wanted it or not - if we were to survive. Funny thing about survival mode: it seems to be a catalyst for many good things. We made changes every day, every hour and in some cases every minute for more than three long years and we were making progress! Three years into it we had

three shifts running and we were making 600 fireplaces per week. We would move lines over night; we would move people from line to line and cell to cell. We would move offices weekly to get people closer to their natural work groups. *The only thing you could count on being the same everyday was the fact that there was going to be changes every day!*

This went on for another two years, and then I got a new boss. We hired a stubborn German out of Frigidaire – Electrolux, and he was "all in" for the first two years: change, change, change. You really could not make a mistake because the opportunities were so large and so obvious that we ran full speed with it until all of a sudden the stubborn German through me a curve ball. He went to a place I never expected. He said to me "Chris, stop the madness and lock it down". I was completely shocked and knocked off my chair. This was coming from a guy who couldn't run fast enough with change, and now he did an about face and told me to lock it down. This made no sense to me, it was blasphemy. I fought it hard for about a month, and then the lesson: "*Chris, for us to know we are making progress we need a baseline. You cannot kaizen if you do not have a base line."* I thought on it for a while and it puzzled me. The guy who was pushing fast and hard for two plus years now all of sudden wanted us to lock it down. I went back to him and I argued, why do you want us to stop making improvements? His response was: "Chris, the people will settle into a routine and they will give us productivity gains that far exceed the physical moves you will make in the next six months. This will gives us a chance to really see what we have built and how it performs. While this happens, write everything you want to change down, then when we get to the six month mark we will assess and plan the next set of changes and moves. We fell in line and it was again a very valuable life lesson. *Change is inevitable but it has to be managed and at some point you need to know where you are at – you have to have a baseline so you can evaluate the impacts of the changes made.* People can only handle so much so fast. They can drink from a fire hose - but only for a short while.

6. Jump in with both feet, commit to it, and stay the course

- SDG and Cortez

I took another staff assignment for two years in a New Business Development role. Staff assignments force you to get results through influence, rather than through command and control. I was charged with finding new products and new markets to provide growth for the company. We hired SDG, the Strategic Decision Group, to help us with a process and a frame work for new business development. *This is what they shared with us: It is better to pick one and go all in as opposed to try ten - and place ten small bets.* The reason for this is new business is TOUGH - you need to be so committed that you cannot turn back. If you have ten small bets you will quickly jump from one to the next - never doing the heavy lifting to get one across the finish line. If you have $5.0 million to invest and you put it all on the one you think initially has the highest payback and the highest probability of success, then the odds are you will stay with it and make it work - since you really do not have a choice. Don't dab your toe in the water, jump in the pool and start swimming! It has to be so hard to give up, that you will be forced to push your way through. The explorer Cortez knew this and was a genius for burning his ships – failure was not an option. New business development is the same way. *The consequences of turning back and aborting have to be higher and worse than the consequences of forging ahead and pushing your way through.* The rewards have to far outweigh the risks taken. By making a large financial commitment up front you sign yourself up to being committed and to succeeding.

It will not work any other way! This life lesson is not for the weak and the conservative – you must have a tolerance for risk and be willing to sign up for going "all in!" It helps if you remove the option of turning back – just ask Cortez!

7. Just do it, process gets results, speak with data

The foundational principals of Kaizen – "making good change," are the following:

- Just Do It!
- Process Gets Results!
- Speak with Data!

In the very beginning of our lean journey we worked with the Kaizen Institute and these were their foundational principles. Even later after working with TBM and Shingijutsu I always came back to these as the most important foundations.

Just Do It!

One can plan, contemplate, deliberate, and procrastinate forever but it won't move the ball down the field. You have to take action. Rude, crude and fast beats slow, elegant and pretty - every time. If you believe it is correct, then act on it - make the change. You won't get a different result if you keep going at it the same old way you have always gone at it. You will never become an expert if you don't start, and if you don't try and practice. *Just Do It is very much in line with fail fast, learn from your mistakes and move forward to leverage the learnings*. The Japanese consultants from Shingijutsu were masters at what they call "moon shine." Moon shine is a term they use for: "try it, try it, try it and then try it some more." Another one of their foundations is that Kaizen activities should never interrupt production. So, most of the trials took place at night – hence "moon shine." Try things at night while the moon is up and the rest of the production machine is not running - so you can learn without disrupting or without jeopardizing meeting customer demand.

Process Gets Results!

Process ensures predictable consistent results – without a process it is impossible to have a baseline, and without a baseline it is impossible to kaizen. Be hard on process and easy on people. *It is never the people that are the problem. It is the process, a lack of process or a lack of process discipline that is the problem.* Your process should be the single best method that has been identified, reviewed, approved and implemented. It should be followed without exception until the next single best method is identified, reviewed, approved and implemented. In this case, process and standard work are synonymous. A process ensures most of the variables are off the table and people will perform consistently and predictably - provided the process is followed.

Speak with Data!

You need to move away from decisions made by opinion, and force people to speak and use data. Data does not lie. Data is not emotional, as a matter of fact; it takes emotions off the table. More often than not, people are and will be surprised at what the data really tells us about our processes and our issues. We assume regularly that we KNOW what is happening and why it is happening. But, we are surprised by the end results. More often than not, when the data is collected and analyzed, we find our assumptions were incorrect and what we thought was happening really is not. Force people to speak and use data - it will ensure accurate understanding, better decisions and drive positive change that is consistent and predictable.

8. **Measurement** – be careful what you wish for
   - What gets measured gets done (Balanced Score Card)

Measurement is essential when you are making changes and improvements. If you don't measure, you cannot confirm the changes you made were improvements. Measurement is very much in alignment with why we must speak and use data – all the same reasons apply. That all said, we need to really be careful about what we measure because that is what we will get! If you measure sales dollars, then that is what you will get, and it may not equate to profitable sales dollars. If you measure cost reductions that is what you will get, and frankly, they may or may not be good for your company – quality may suffer. The point I am trying to make is: make sure you take time when constructing your measurements and scorecards. Make sure they have checks and balances. For example, if you are going to measure sales dollars, then also measure gross profit percentage on those sales dollars. If you are going to measure cost reductions, then also measure quality and service calls associated with those cost reductions. *A balanced score card that addresses two or three metrics in each of the following categories is advisable - to ensure you drive the behaviors you really want with your metrics.*

- Sales / Revenue
- Profitability - Gross Margin / Net Income
- Quality
- Delivery
- Cost

People deliver what is measured and rewarded. *Be sure you measure and reward the things that will motivate the desired behaviors to achieve your business objectives. Checks and balances are essential when you are trying to drive positive trends and overall business results.*

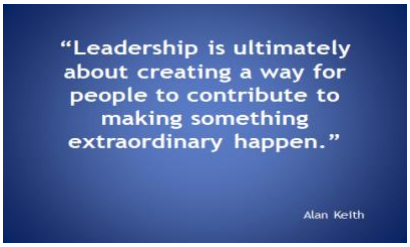
Summary

Building a strong and sustainable lean culture requires *leadership*.

- Leadership is doing the right thing all the time. It requires:
  - Making difficult decisions when they are necessary.
  - Demanding commitment and conviction.
  - Supporting your team when they need encouragement and coaching.
  - Performance managing your team when they need to be motivated and directed.
  - Empathizing when your team needs moral support and positive encouragement.
  - Modeling the core values - even when frustrating and difficult.
  - Staying focused and being consistent and predictable.

- Leadership requires a clear vision for the company. One that is:
  - Well defined and clearly communicated.
  - Commonly understood and inspiring.
  - Most of all - <u>lived</u> by the leader.

I have shared many tools and techniques, and touched on some very fundamental attributes of what true leaders do when building and sustaining a lean culture. What I have not done is defined culture - until now. Culture is:



- What people are doing when no one is watching.
- The core values that are lived every day by the leader.
- The result of how you act and behave.
- How your leadership team acts and behaves.
- What separates great companies from good companies.

One of the most influential leaders I have ever worked for once said to me, "Chris, you can give our strategic plan to our largest competitor and it really won't matter." I quickly jumped on that and asked: "Really, you would not care if our biggest and most formidable competitor had our strategic plan?" His response floored me: "No, I really would not care nor would I worry about it!" I had to ask again "Really!?!" He said: "Really and here is why: It would not do them any good. They don't have our leadership. They don't have our core values. They don't have our culture. And Chris, most importantly, they don't have our people! They could not execute our strategy."

I have thought on that for many years, and at the time, it seemed very poetic - and frankly motherhood and apple pie. But, now twenty-some years later and after working in or supporting over one hundred and fifty companies during my career, I have come to realize what he really meant. If you always do the right thing, if you live your core values and if you insist on your leaders living your core values, you will have the culture and the people that will allow your company to achieve and sustain world-class performance results.

It starts with you. Be the leader you need to be and you will be rewarded for your commitment and your passion. Remember, people cannot follow - if you are not leading.

Do the right things. These eight things are:

1. **Tone at the top** – Lead by example and demonstrate commitment. Be consistent.
2. **Focus on the positives** – opportunities, not problems
3. **Leverage your learnings**
4. **Have a bias for action and a sense of urgency**
5. **Reinforce the fact that the only constant is change**
6. **Jump in with both feet, commit to it, and stay the course**
7. **Just do it, process gets results, and speak with data**
8. **Measurement** – What gets measured gets done.

Chapter 2

Metrics that Move the Business

Dave Deal, is an operations general manager who leads business transformations. He has leveraged his engineering background in the automotive, rubber and plastics, and image processing industries. His experience ranges from customized to continuous flow and from manual assembly to digital production environments while achieving outcomes that support the business strategy and generating productivity gains.

He is an expert at applying Lean methodology to create a culture where everyone succeeds. He has led creative "white board" conversations to design and build new capabilities for the organization to meet customer demands. Through changes to systems, processes and methodologies, he has reduced cost and increase velocity.

As a leader he brings strategic vision, passionate curiosity and focused priorities to the business. He is always an advocate for his team and ties the company's strategy to their individual work. Known as a mentor and teacher, he fosters a collaborative learning environment.

Every business must constantly improve and evolve if they are to stay relevant and survive. The marketplace is always changing and somebody is going to find the better way to compete. Unless your business is also finding the better way, it will fall behind and become less competitive and less relevant. The key is not just what to improve, but how to improve. This is the foundation for any effective continuous improvement effort.

The measurement systems employed to drive the business are the scorecard for success. *If we cannot measure the business we cannot improve the business. The phrase "what gets measured gets managed" is often heard in discussions of performance. While this is certainly true, there is a significant difference between management and improvement.* Management is an indicator of maintaining the current level of performance. This is often the basis for standards and is intended to identify when something is not as expected. Improvement is not about maintenance, but rather intentional change to generate a different outcome from a process.

Continuous improvement is often described as a journey. This is a fair representation as we often do not know exactly where we are going or how exactly we will get there. It has an end goal to establish that, due to various business circumstances that may change but it is still rooted in the company's long-term strategy for success. The path taken will have obstacles to overcome and will therefore, not be a straight line from start to finish.

I believe that each person comes to work each day to do a good job. *If everyone on our team knows what is important and why it is important they will make an effort to make good decisions during the course of their work day.* I also believe everyone wants their work to be important. If it was not important, then they should not be there doing it. A good continuous improvement effort involves the people doing the work. If we assume our employees are not capable or are unwilling, our improvement efforts will fail. If we rely on one or two people to make all decisions regarding improvement, we will severely limit our capacity for making change that is sustainable. If we harness the power and capacity of each employee, our improvement effort will become unstoppable.

The process of successful continuous improvement can be broken into three distinct components.

- "Learning to See" where true understanding of what creates value within the business and what does not.
- "Learning to Solve" where various problem solving tools are applied to physically drive a change in a process to achieve a different outcome.
- "Making and Sustaining Change" where the changes made are firmly embedded into an accepted new way of performing the work - so when issues arise, which they always do, the process does not revert back to "how we have always done it."

The Journey

Each year many of us are given improvement goals. These goals are tied to the annual operating plan that is in support of the long-term business strategy. Reaching these goals can often be a journey with an undefined path. Have you ever been to the Grand Canyon? It is an incredible site and an immense hole in the ground with a river at the bottom. When you stand on the rim and look down, you get a sense for just how big it really is. When you are assigned your improvement goals for the year, do you ever get the feeling you are standing on the rim of the Grand Canyon looking down at the river - wondering just how you are going to get there? While it may be an overwhelming feeling standing on the edge looking down, a proper understanding of how to navigate an unknown path will result in a safe journey to the river and back, and your goals will be met.

Learning to See

My son and I enjoy backpacking. We often do this for a week in the backcountry of a National Park. Hiking in the backcountry requires preparation for the journey. Preparation includes an understanding of where we are going, how we are going to navigate the path, and what tools we need to bring to solve problems along the way.

Look at the image on the right. This is a trail along the Royal Arch Loop in the Grand Canyon. Can you see the

markers? While the trail is littered with obstacles, it is considered a well-marked trail.

Now look at the image below. It is a close up of the same photo with two small rock piles circled. These rock piles are called cairns and the backcountry trails are all marked by these. They are a perfect marking system on a trail like this. They are natural parts of the path but yet are not stacked naturally. Unless you know what you are looking for, you likely would not see them unless they are so big and so obvious that you couldn't miss them. When you know what to look for, they stick out as obvious markers.

The same is true for identifying improvement opportunities. When you are looking at a process day in and day out, opportunity for improvement is not always easy to see - unless you know exactly what to look for. When you do know what to look for, the opportunities will become obvious. This involves knowing and understanding the 8 Forms of Waste, understanding Value Stream Mapping, the fundamentals of One Piece Flow and the power of Visual Management. All of these principles are about *Learning to See*.

Learning to Solve

Learning to solve is a process of defining "what is the current state," determining what it could or should be, and then applying problem-solving tools to make change happen to get from where you are to where you want to be.

Along the trail in the Grand Canyon various obstacles show up. This requires knowledge of the conditions of the trail and what tools and problem-solving methods may be required to get past the obstacle. In the image below, the path became very small. The foot holds were six inches deep and the hand holds about the same. This is not a place to cross with a 45 pound backpack on. The solution for this section of trail involved one person on each side and hoisting the packs across with a rope. We knew this section was on the trail so we came prepared with the appropriate rope to ferry the packs.

This image below is another section of trail but covered in snow. This required traction devices on our boots along with sturdy hiking poles for safe crossing.

We understood what we would likely experience and were prepared to have the appropriate tools and understanding of how to use them to successfully pass along the trail. The same is true for problem solving processes. There are many tools available to solve problems and we need an understanding of many of them to be successful. There must be awareness of how to utilize various problem-solving tools and under what circumstances to apply them. A rope would not have helped cross the snow just as foot traction would not have helped crossing the narrow ledge. Learn what the various tools are, when to best use them and how to apply them. One size does not fit all.

Making and Sustaining Change

The image below is a well-defined and very obvious trail that anyone can follow. It is in an area of heavy traffic and used by many people who are not prepared to find their own way. The same can be true of making changes to processes that many people need to follow. When the improvement process is completed, a well-defined path must be left for everyone to follow.

This can take the form of “standard work,” error-proofed activities, and well defined metrics.

The improvement process is not complete unless it is left in a form that any employee can be successful performing the work.

Identifying opportunity and applying problem-solving tools to develop a solution are arguably the easiest part of making lasting improvement. *In my experience, the most difficult part of the improvement journey is getting the people who must own the work day in and day out to buy into the changes required and sustain those changes even when something goes wrong.* How often have you made a change to a process that went back to the original method as soon as something went wrong or got harder?

Making change requires an understanding of the people involved in the process and how they view the changes being made. An understanding of where individuals are in their own personal acceptance of the change is necessary. A critical mass of agreement or at least acceptance is required to assure the team will accept the change and assure a legitimate effort to create success and meaningful long-term change I required. This requires time and involvement. The people affected by the change must understand why change is necessary and be allowed input into the solution chosen.

Nobody wants to be told their work has been done wrong. And, nobody wants to be told there is now a "new and better" way without engaging them in how the work is truly done. Getting change to be sustainable requires involvement of everyone. Agreement is not always required, but acceptance is.

The three components of continuous improvement: Learning to See, Learning to Solve, and Making and Sustaining Change are baseline requirements for establishing any continuous improvement effort that will be successful over the long term. Without a thorough understanding of each of these and how to apply them, the continuous improvement process will be inconsistent and unsustainable.

With the three components of continuous improvement established, the *metrics that move the business* must be established to measure success.

Metrics that Move the Business

Every business needs to have a defined strategy for how they intend to succeed in the marketplace. The strategy must be executed on the factory floor or the office floor if it is to be of any long term value. It is the factory floor or the office floor where the real work gets done. It is where the product, service, or customer experience really happens. If the strategy cannot be articulated into action, it holds little value.

For the metrics to move the business, they must be real time and actionable where the work is performed. That is not to say that historical trend analysis is not important. It is required to establish long term learning and identify larger issues for resolution. They do not, however, drive immediate responses to things gone wrong or opportunities for immediate gain.

A strategy is a chosen method to achieve a vision, or outcome, three to five years in the future. Strategy must be broken down into expected outcomes that, if achieved, will determine success. For the strategy to succeed, metrics must be established that identify when a course correction is required to achieve the outcome. For metrics to be established, it is necessary to understand not only what is important, but why it is important. For metrics to be valuable, they must be consistent, easy to understand and, if correct, support the strategy.

The graphic below is one visual of how a company may drive the strategy down through the organization from the executive suite to the individual department or process performing the work. On the left side of the pyramid, "what is important" and why it is must be defined from high-level strategy all the way down to the individual process or department. The definitions and expected outcomes must be consistent. The question must be asked at each level of the pyramid "what does success look like?"

For example, if part of the strategy is to be the highest quality product available in a specific category, the definition of high quality must be consistent from the top to the bottom. For some, high quality may mean zero defects while for others it may mean a threshold level of failures. It may mean a product that will last for years or it may mean a predefined useful life. *Leaving such definitions to "common sense" does not work because common sense is not common.* We all

have different experiences, opinions and values that drive us to have our own "common sense." It must be defined to avoid disagreement.

On the right side of the pyramid are the metrics that build upon each level from process or department up through the executive suite. These metrics, must be well defined and in agreement up through the organization. For example, delivery metrics at the process level must support the delivery metrics at the department level. Is the delivery metric good when a task is completed on schedule or when it was done "as fast as possible"? As metrics are chosen on the right side of the pyramid the question of appropriateness must be asked. If the metrics chosen at the process or department level indicates success, does it support the next level up success? Poorly chosen metrics can easily result in success at one level while creating problems at another level. Using the delivery example, if one process defined deliver success as completion as fast as possible, the next process may easily be buried in inventory that they cannot effectively manage. So if the definition of the chosen metric does not align throughout the business, it needs to be re-evaluated.

What is Important and Why

The only way metrics will drive success is if they support what is important to the organization.

I have always used five buckets for operational metrics. They are:

1. Quality
2. Efficiency/Productivity/Resource Utilization
3. Delivery (Speed/Time/schedule)
4. Innovation (Process Change/Capacity/Technology)
5. People (Engagement/Safety)

These are in no particular order as they all need to be present in some form. I have used these at the factory floor level to establish metrics that are timely, and to establish when a process is in control or in need of change. You will notice that I did not put cost on this list. That is because I believe cost is an outcome. If all of the metrics are defined well and all are successful, the cost of the product should be exactly what is expected. Cost is a rear view metric that provides some level of historic value but cannot be measured well on the factory floor. The people involved in the process do not want to be viewed as a cost.

When establishing metrics for each of these categories, you must define what is important and why. This must be done from strategy to the plant floor and then back up to strategy to determine success. Without agreement, the metrics can be in conflict within a department or between departments. Along with what is important and why come a prioritization of each. The prioritization will guide the decision making process when something goes wrong. For example, is it more important to be on time or to be productive? The sales team will say on time while the finance team likely would say productive. Without a process of prioritization, second guessing of or a reluctance to make a timely decision is likely to occur. Neither circumstance is healthy for a well operating, highly engaged factory floor.

Management vs. Improvement

There is truth to the phrase "what gets measured gets managed." Management of a process implies maintenance of the current state to a predictable outcome. Continuous Improvement implies changing the current state to create a new outcome.

It has been my experience that there is a need for both. If all metrics are established solely to manage the process, there will be no real improvement. At the same time, if all metrics are used to only do continuous improvement, there will be chaos. Most organizations can effectively manage between three and five active improvement activities at one time. More than that and resources become constrained and stability is compromised because everything is in a constant state of flux.

As part of defining what is important and why for the deployment of the strategy down through the organization, the top three to five areas that require improvement should also be defined. This can then be used to establish agreement throughout the organization for which areas will be managed to assure stable outcomes and which areas will have resources applied for improvement. These agreements are often part of the annual budgeting/operating plan process. Individual goals and department goals should be in agreement with the annual targets for improvement and should reflect the availability of resources available for improvement.

It is important to be intentional about managing vs. improving. When a process is determined to be stable and acceptable, it is not a good use of valuable resources to improve that process while another is not stable or acceptable and needs improvement. It is also important to recognize that improvement of any process means change. Change has the potential for unforeseen issues. If everyone is in agreement on what process is to be improved, then the risk of unforeseen issues causing surprise are reduced. At the same time, if a managed process gets changed, it will have a high likelihood of causing unforeseen issues that surprise the downstream processes.

The potential success of making and sustaining change is increased dramatically when everyone is aware and in agreement of the effort to improve. If Process A is trying to improve a quality issue while process B is trying to improve a productivity issue and Process C is trying to improve a delivery issue, there is a high probability of chaos. If all three are in agreement to solve the delivery issue, the productivity and quality issues will likely show up as part of the necessary changes for success of all three processes.

How Do I Know? - Nine Critical Questions Need to Be Answered

1. How do I Know?

Metrics should be designed to identify whether a process is in control or if change is required. When establishing a metric for any process I answer a series of questions before using it.

2. Does the metrics support what is important?

How many metrics does your organization have that are prepared and published simply because they always have been? Was there a problem some years ago that required it and the issue is no longer present? It is easy to prepare a plethora of metrics because they are simple to capture or they were originally for a specific purpose that is no longer valid. I recommend you make those go away. If the metric does not support what is important is only consumes resources and causes confusion.

3. Is the metric timely?

If the metric is intended to identify and resolve manufacturing or service level issues, it must be real time or very close. It must be fast enough to allow an opportunity for problem solving and issue resolution before it is too late. Often I see metrics based upon yesterday's data, or last week, or even last month. These metrics are too late to be helpful in solving urgent issues.

4. Does the metric identify when action is required?

Or is the metric designed to simply "comply" with another department's desire for information. If the metric does not drive action then it is, at best, a historical analysis information tool.

5. Does the metric support process owner problem-solving?

I believe process owners need to be just that, process owners. They need to know everything about their process. The metrics they use should be designed to give them the information they need to maintain stability or improve.

6. Does the metric support employee success?

I believe everyone wants to do a good job and own their work. We, as leaders and managers, owe them an opportunity to be successful. If the metric is unattainable or does not support what is really happening, then what purpose does it serve other than to make an employee feel helpless or unimportant? If our employees know what success looks like, and know the metric is designed to help them succeed, I believe they will engage in making everything work better.

7. Is there agreement on the metric?

This supports the discussion on what is important and why. Are we maintaining or are we improving? If each process or department is allowed to establish their own metrics, the probability of success is low. Everyone must agree or accept the metrics for Quality, Efficiency/Productivity, Delivery, etc. or there will be conflict or complacency.

8. Is there understanding?

Does everyone involved in using the metric understand what is it intended to tell us? Do we understand the source of the data and what changes can be made to affect the outcome? If there is no understanding there will be no improvement.

9. Are we maintaining or improving?

Maintenance of any process can be difficult and time consuming and any changes to processes should be confined to maintaining or re-establishing stability. This is important work and necessary for a well running factory or office. When something goes out of control, it must quickly be driven back into control for the process to produce the expected outcome.

Improving requires different decision making and, often resources applied. Established goals are there to help measure progress to a new state rather than solely for stability. If stretch targets are established without the proper understanding of why it is important and the improvement process that will be employed to reach them, they can be deflating to employees and cause chaos in the factory. If everyone understands, they will become engaged in the process and help drive success.

An Example of What Not to Do

This is an example from a regional manufacturing company that is very successful but needed to change. There were two primary components to the business and they largely operated independently. One part of the business supplied the raw material to the other, who then supplied the finished product to the end customer.

The metrics used by the business had been in place for years. The data for each one was collected at the end of the day. This data was then given to an employee to enter into a computer. The data was stored at the corporate headquarters and was manipulated and delivered back to the local operations the following day.

An operations review was done each month and was driven by the finance department. The scheduled review was three weeks after month end and focused on cost and spending. The primary questions were always “What did you buy and why did you buy it?”

The culture that was created using day old operating data to drive daily activities and spending data that was between 3 and 7 weeks old to drive cost was stifling.

Maintenance was viewed as an expense to be avoided. Managers were expected to wait for a part to break before replacing it. Then they were expected to find a used one if possible.

People were viewed as an expense. Their metric was labor dollars per unit. Therefore, constant arguments broke out over whose budget would pay for what.

Managers were defensive and unwilling to bring problems forward. They were unwilling to make decisions that would be second guessed. Every conversation was looking for fault. The two components of the company blamed each other for every issue. One part blamed the raw material and the other blamed the processing.

It was a culture steeped in fear because the metrics were not timely or designed to solve problems. They were designed to show fault and identify blame after decisions were made.

The Metamorphosis

Then the three components of continuous improvement were taught throughout the organization. This went beyond just operations but included finance, human resources, planning, quality and sales. The metrics and review process was reconstructed to be driven by Operations and make it personal for each manager. Data was gathered hourly and posted visually during the day for all employees to see. Reasonable and attainable goals were set for units per labor hour rather than Labor $s per unit (employees knew how many units they produced, but they did not know what they cost). Issues were identified and resolved quickly within plain sight of every employee. Daily startup reviews were established with all employees to discuss yesterday's results and today's goals. Monthly reviews by managers were designed to assess progress to plan on last month's improvements, and to establish targets for improvement in the upcoming month. Resources of needed human, technical or capital were identified and approved. Recommended spending became viewed as an investment rather than an expense.

The culture change was swift and dramatic as metrics were designed to bring problems out into the open to be resolved and allow the managers to own their process.

Maintenance was an investment in uptime and productivity.

People were viewed as problem solvers not simply a cost. Employees were allowed to own their work and participate in making everything run better.

Managers owned the outcome of their facility. They were able to describe the decisions they made and why they made them. They began to feel empowered to run their business.

Problems became viewed as something to acknowledge and solve - not hidden. Each problem that was resolved made the work of every employee easier and more satisfying. Every day something new would come up and be error proofed. Repeat errors would get additional resources applied.

Both components of the company worked together for common success. Small changes in each area multiplied into big results. The entire process was viewed as owned by both and success would only come if both performed well.

Three metrics in each component of the business were chosen to improve the first year. Everyone knew the goal and everyone understood that our focus was to maintain the other aspects of the

business and to improve these three. Resources were applied appropriately and success was reviewed regularly with everyone involved.

Quality issues were reduced dramatically. Yield loss was reduced by half. Productivity was improved significantly.

Employee turnover was reduced because people began to feel valued and that their opinion mattered. They were no longer expected to leave their brain at the employee entrance.

Cost per unit was reduced significantly by focusing resources on improving what was important. The spending for each unit was reduced enough to allow for additional resources to be applied to the improvement process. Cost was viewed as an outcome and the improvement in the operational metrics proved that to be true.

Knowing the phases of Continuous Improvement is a baseline for any sustainable improvement effort. Driving change with well-designed metrics that support the business strategy requires all levels of the organization to participate and agree on what is important and why.

Remember, all processes are people dependent and finding effective ways to engage everyone in the management and improvement processes is critical to success. Without agreement from top to bottom on what is important and why, the improvement process will always struggle to become embedded into the culture of the organization.

"*I have read 'Lean Leadership' and I think it is outstanding. It covers all of the basics of Lean and does so with real life examples that are both interesting and relevant. I especially liked Dave Deal's section 'Metrics That Move the Business'. Being a Controller, I'm always looking for different ways to measure results, but this came from a different angle. He looks more at what you want to accomplish rather than the actual metric. After reading this, I think I can improve the Decision Making course I teach at Manufacturers Alliance*."
- A Semi-Retired Corporate CFO

Chapter 3

'Voice of the Customer' Defines Value

Brian Swanson has spent the last twenty-seven years working in manufacturing and process improvement and has been training peers for the last ten years.

Twenty years of his career were spent in the Forest Products industry; first, manufacturing high-end furniture and cabinetry in his own business and later at Lexington Manufacturing, an industry leading wood component manufacturer serving the window and door industry.

Currently, Brian is a partner and Director of Enterprise Excellence at NACS, Inc. in Ham Lake. In addition, he is the founder and Chairman of the Board for HOPE 4 Youth, an organization serving homeless youth in the Anoka County area.

Many of us, maybe even most of the people reading this book, have considered the possibility of starting their own business at one time or another. It's safe to assume that several readers have gone so far as to start a business of their own and a few are currently employed by organizations that they founded themselves. Even so, readers are likely to be surprised by what I am going to explain. Surprised not because it will be new or unique, in fact, I think it is nearly universally known.

I discovered this valuable information shortly after being invited to join the team at NACS, Inc. in August of 2007. My job was to contribute my skills to a unique and talented organization in order to help create a culture of continuous improvement with the clear intent of becoming the best at providing our unique manufacturing solutions to our customers. At the time, NACS, Inc. was in the business of designing and building automated equipment, and they envisioned a future that included offering a wider range of manufacturing services.

I had been involved in one of the best continuous improvement environments for 15 years at Lexington Manufacturing. I learned how to systematically guide a team through a process improvement from some of the most collaborative and supportive people a person could ever have the pleasure to work with. I had participated in teams that accomplished results that even the Toyota gurus would be proud to call their own. As a member of the Leaders Alliance peer group within the Manufacturers Alliance association, I had benchmarked at least 100 of the best manufacturing companies and learned something from each. The Leaders Alliance also gave me access to the greatest network of process improvement minds I could find and all of them were willing to offer whatever assistance they could.

Even with all of this background and support, the study of business and manufacturing is imperfect. The challenge that most of us face is boiling all of the ideas and theories down to a cohesive plan that we can apply to our company. At NACS, Inc. we determined that there were six aspects of excellence that were keys to our future, and that three of those aspects naturally created an environment for the other three to grow.

We envisioned an environment that included:

- an attitude of excellence,
- an empowered workforce and
- continuous improvement.

This environment would be built on the foundation of:

- the Voice of the Customer,
- strategic business management, and
- value-focused processes.

We started our Voice of the Customer effort in a typical but somewhat misguided fashion. We intended to clearly define value from the customer's viewpoint by asking questions like:

- "What are the most important things that NACS provides to your organization?"
- "How can NACS improve?"
- "What does NACS do well?"

I would bring this information back to the organization and work with the team to develop strategies to better align our processes with what the customer values.

Through a series of conversations with Bill Doty, the founder of our company, I began to realize something that I had never considered before. Bill helped me understand the revolutionary insight. In essence, what he communicated to me was that *companies are rarely started to serve the customer*.

Think about it, do entrepreneurs really start out on their own and take risks involved in starting a business because they so desperately want to serve the needs of the customer? Businesses are started because people are looking for the opportunity to build something that endures to have some control of their destiny, to create a better working environment, to be personally fulfilled; to (you fill in the blank). The truth is that the list of reasons is nearly endless and rarely includes a burning desire to serve the customer.

It's ironic that we focus so intently on the customer when we define value while neglecting the fundamental reasons that companies are started. In addition, we are often frustrated and confused when we struggle to gain buy-in and support for our strategies when we bring Voice of the Customer results back to the organization.

How much better would the results be if we first took the time to learn all we can about the needs, desires, and dreams of the people that show up each day to make our companies work? *How much better would our results be if we kept the focus on what really matters to our staff?* We surveyed and interviewed all of the staff in the company and asked them what was important to them, how their work brought meaning, and how they believed the organization fit into the marketplace. In addition, we asked questions about their insights and opinions related to our customers and competition. The answers to these questions provided invaluable information that helped us clarify how our employees define value.

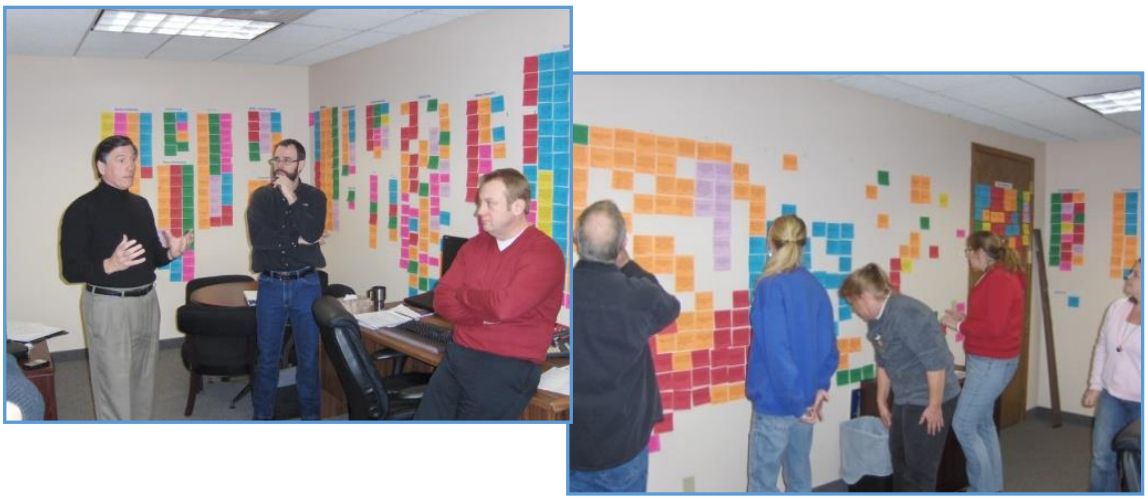
Valuable insights were uncovered. For example, we found out that a few of our employee's fish regularly with some of our key customers. Candid feedback from time sitting in a fishing boat became part of our Voice of the Customer data.

With input from an outside advisor and the information that we gathered from our staff, we drafted questions for our external customers. Preparations were made based on the themes we heard from our staff combined with some of the questions we originally planned. Each customer interview was considered independently. We drafted questions carefully to both define value from each customer's viewpoint and to provide better context for the information that we gathered internally.

We arranged meetings with individuals at each of our key customers. Two or three of us attended each interview. One person asked the prepared questions, one listened for opportunities for clarifying questions and a third, if available, took diligent notes. If only two of us were available for an interview, the note taker also listened for opportunities to clarify or dig deeper. As the interviews progressed, each thought that was captured by was recorded on a Post-it note and put on a wall. Once all of the interviews were complete and all of the information was posted on the wall, we asked every employee to find at least an hour in their schedule to spend in sorting the Post-its into affinity groups on the wall. If someone had placed a note in one group, and another person wanted to move it to another group, we asked them to note where it was being moved from. This provided a history.

We began to link customer comments to information gathered internally. We made a point of illustrating meaningful links to each employee. We gained alignment and buy-in because we

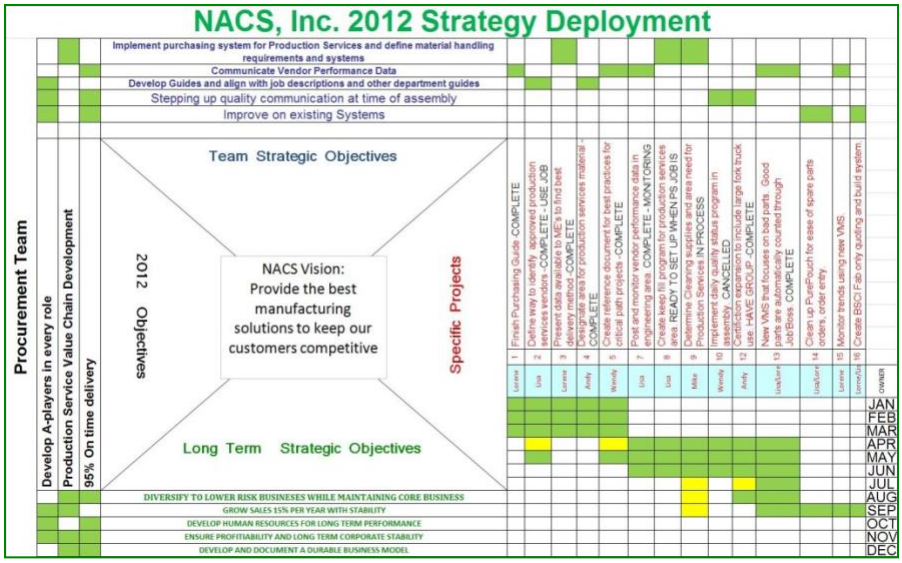
were able to illustrate how our external customer's thoughts and viewpoints supported and aligned with theirs.



In summary, the process we used:

1. Survey all internal staff
    1. Ask staff some questions that you really don't expect them to have answers for
2. Follow up with staff as necessary to clarify anything that in not clear
3. Develop questions for customers based on themes from the internal surveys
    1. Ask actionable questions
    2. Ask questions that will provide direction on improvements
4. Interview customers in teams and keep detailed notes about every comment
5. Record every comment (internal and external) on a Post-it note.
6. Have all staff help sort the comments into affinity groups
7. Identify themes, trends, actions, and strategies from the groupings
8. Feed results back to staff and customers to confirm results and build momentum
9. Establish clear strategy and empower staff to achieve results
10. Follow up to confirm alignment

Once all of the sorting and resorting was complete, the management team with assistance from an outside facilitator spent a few days reviewing and absorbing the information that was represented. We discerned the following from our efforts:



The output has defined our strategy for the past eight years!

Lessons learned:

- A clear understanding of what is important to your staff is what makes a VOC process actionable
- Your staff will surprise you with what they know about your customers
- Tying customer feedback into the same process you use to process staff feedback is powerful

Chapter 4

Lean Culture - It's All about the Leaders

Melissa Sawin, is the General Manager of Mid-Continent Engineering, a contract manufacturing company serving the defense, aerospace and healthcare industries. She is an enthusiastic champion of continuous improvement initiatives - with 22 years of experience in the durable goods manufacturing industry. She is known for leading organizations to achieve success by relentlessly eliminating waste and bringing creative ideas to life. With a background in Communications, her energy and collaborative leadership style have enabled her to develop and motivate high performing teams. She has been an effective executive leader with experience in strategy deployment planning and execution of powerful transformations leading to significant growth and profitability.

"If your actions inspire others to dream more, learn more, do more, and become more - you are a leader." - John Quincy Adams

Why is continuous improvement so difficult? Why do so many companies struggle to sustain? Frankly, it's because too much emphasis is put on the tools of lean and not enough effort is made by leaders to focus on creating the right culture and infrastructure. In my 12 years of experience implementing lean in two different manufacturing companies, instructing hundreds of lean practitioners and leaders, and touring dozens of factories in Minnesota and across the U.S, I can tell you that lack of sustainment affects the majority of companies that embark on a continuous improvement journey. The lean author and consultant, David Mann, recently stated that as few as 2% of companies that say they are practicing lean are truly successful with their lean implementations. The other 98% are just dabbling in it. So what separates the 2% from the 98%? An effective lean management system does.

While the lean management system is made up of four important components (which I will explain later), its success is determined solely by **leadership behavior**. This is the single greatest key ingredient to the successful creation and sustainment of a continuous improvement culture. The behavior that is required is one of complete and total engagement and participation in the continuous improvement journey. I'm talking roll up your sleeves behavior, where all leaders, including topline executives, don't manage from their offices, but rather from the gemba (where the work gets done) across every area of the company. And they do it consistently, day after day, week after week, year after year. Anything less will result in a weak continuous improvement culture that will cause the company's journey to struggle or ultimately fail.

Customize Your Lean Journey Vision

There are hundreds (perhaps thousands) of books on how important it is for leaders to create and share a vision for the company with their employees. We all know it's important, right? Any

executive with experience of implementing a continuous improvement journey will tell you it's even more important to set and communicate a clear, strong vision for your company when you are on a lean journey. Why? Because a continuous improvement journey requires constant change, a common fear among most people. The shared vision helps employees understand why they need to change.

I'm not referring to the typical Vision, Mission and Goals statements that most companies develop and print on posters to put on the walls or on laminated cards in your pocket. I mean a clear specific vision of what your company looks like as a best-in-class, lean operation. One method of developing and sharing such a vision with your company is through a typical current state, future state type exercise such as the one below.

Advanced	Mixed Model at Takt Time	Kit flow or less than 2 hours of inventory	Moving lines	Standard work improvements made quarterly	Plant-wide visual control	Same abnormalities never re-occur	Setups under 60 seconds	Total flexibility between areas	Total Equipment Poke-Yoke
Level 4	All employees cycle time is within 5% of Takt Time	1 day of inventory	Integrated fab, weld, paint etc. and assembly	Standard work improved every 6 months	Andon system established and sustained	30 second or less response from supervision	SMED	Some flexibility between lines and functional areas	Part removal (Hanedashi) & Chaku-Chaku
Level 3	Daily work within Takt Time	1 week of inventory	Flow from raw materials to finished goods	3 elements of standard work posted, implemented and sustained	Hourly abnormality tracking systems maintained	Line stops for abnormalities	15 minute setups	All jobs have at least 2 certified operators	Major elimination of holding and feeding
Level 2	Cycle time exceeds Takt Time	2 weeks of inventory at a time	Isolated islands of flow	Work instructions written and posted	Chest high levels-line of sight	Employee ability to detect abnormalities	30 minute setups	Employees know two or more jobs	Some autonomation in work stations
Level 1	Takt Time is unknown	Monthly amount of inventory or more	Job-shop batch production	No posted standard work	People, materials and equipment are hidden	No system to detect abnormalities	60 minutes or more	Employees know only one job	No Autonomation
Level - Category	**Takt Time**	**Pull System**	**Flow Production**	**Standard Work**	**Visual Control**	**Andon System**	**Setup Reduction**	**Flexible Employees**	**Jidoka**

A tool such as this is commonly used to assess what level the organization is at (y/vertical axis) relative to each lean tool (x/horizontal axis). Tools like this can be very helpful in identifying

and getting everyone on the same page about the current state. However, they also have a downfall. They assume that the tools listed are all important and relevant to the organization, which is simply not the case. A common mistake many companies make when they embark on a continuous improvement journey is they assume all of the tools of lean are important and should be implemented. This is not true because every company has a different vision for success and different problems that need to be addressed internally in order to achieve that vision.

For example, a company that has high volume products will find TAKT time very useful, whereas a company with low volume, high mix will find that tool more challenging and less useful. Likewise a company with lots of machines and machine changeover will find setup reduction to be important whereas a company with very little machinery or machine changeover will not. *Thus, setting a custom vision is vitally important*. Once that is done the organization must do a current state analysis to determine which tools of lean will be most beneficial in helping the organization achieve its vision.

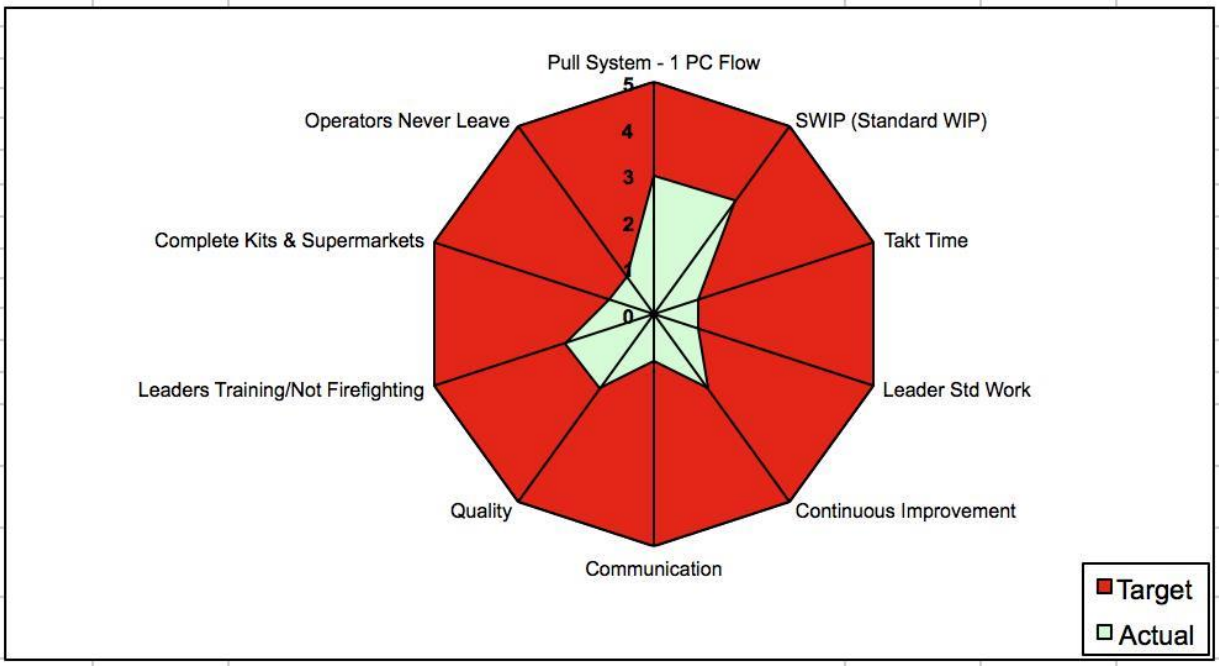
At one company I worked for we used a collaborative approach with a structured method to create our custom vision, facilitated by the lean consultants we employed. Six months into our lean journey we gathered our management team from shop floor team leaders through manufacturing executives in a one day "kaizen"-type event. Everyone was given a stack of Post-it notes and asked to envision what the company would look like as a world-class manufacturing operation. We were instructed to write phrases, one per Post-it note that would describe such an operation. We compiled all of the notes into similar themes on a white board and then voted to identify our top 10 descriptors of a world class operation. This was the result.

Rating			
Pull Systems	1 - Push	**SWIP** (Standard WIP)	1 - No SWIP identified
	2 - Scheduled FG Production		2 - SWIP identified but not in place
	3 - Pull signal from Distribution Center		3 - SWIP in place, not consistent
	4 - Pull based on customer demand		4 - 100% in place
	5 - 1 piece flow based on customer demand		5 - Reducing SWIP
Takt Time	1 - Calculated, but not used	**Leader Standard Work**	1 - Not written, incomplete
	2- Used to plan labor requirements		2 - Written, not followed
	3 - Used to move labor as needed		3 - Followed > 50%
	4 - Meeting > 80%		4 - Followed > 75%
	5 - Meeting > 95%		5 - Followed > 97%
Continuous Improvement	1 - No sustainment	**Communication**	1 - Not measuring
	2 - Sustaining kaizen events only		2 - Majority strongly disagree
	3 - All Prod Mgmt implementing 1 idea/wk		3 - Neutral
	4 - 1 improvement idea/mo. Per EE		4 - 70% strongly agree
	5 - Every EE implements 1 idea per week		5 - 90% strongly agree
Quality	1- Not tracked	**Leaders Training Not Firefighting**	1 - Not measuring
	2- 70% FPY, 6% warranty		2 - Tracking, pie charts created
	3- 80% FPY, 5% warranty		3 - Hitting 50% of ideal training time
	4- 90% FPY, 4% warranty		4 - Hitting 75% of ideal training time
	5- No Dyno needed, 3% warranty		5 - 100% ideal training time
Complete kits & Supermarkets	1- Not measured	**Operators Never Leave** (work station for non-value added)	1 - Not measured
	2 - 70% kits comp Assy; Sprmrkts 50%comp/order		2 - Measuring occurances
	3 -No red flags Assy; Sprmrkts 75%comp/order		3 - 50% reduction in occurrances
	4 - 50% red flags before Assy; Sprmrkts 90% stocked		4 - Measuring minutes/no more than 5 min/ee
	5 - Never a red flag; Reducing supermarkets		5 - Never leave the workstation, measured w/QCDS

For each descriptor, we created a scale of 1 to 5, beginner to advanced. Then we gave a copy of the scale to everyone and sent them out to walk the gemba and rate our company on each

category. After gathering everyone's input, we debated and discussed until we reached consensus about our current state (actual) vs. target as seen below.

	Target	Actual
Pull System - 1 PC Flow	5	3
SWIP (Standard WIP)	5	3
Takt Time	5	1
Leader Std Work	5	1
Continuous Improvement	5	2
Communication	5	1
Quality	5	2
Leaders Training/Not Firefighting	5	2
Complete Kits & Supermarkets	5	1
Operators Never Leave	5	1
(workstation for non-value added)		
Ideal Plant Score	50	17

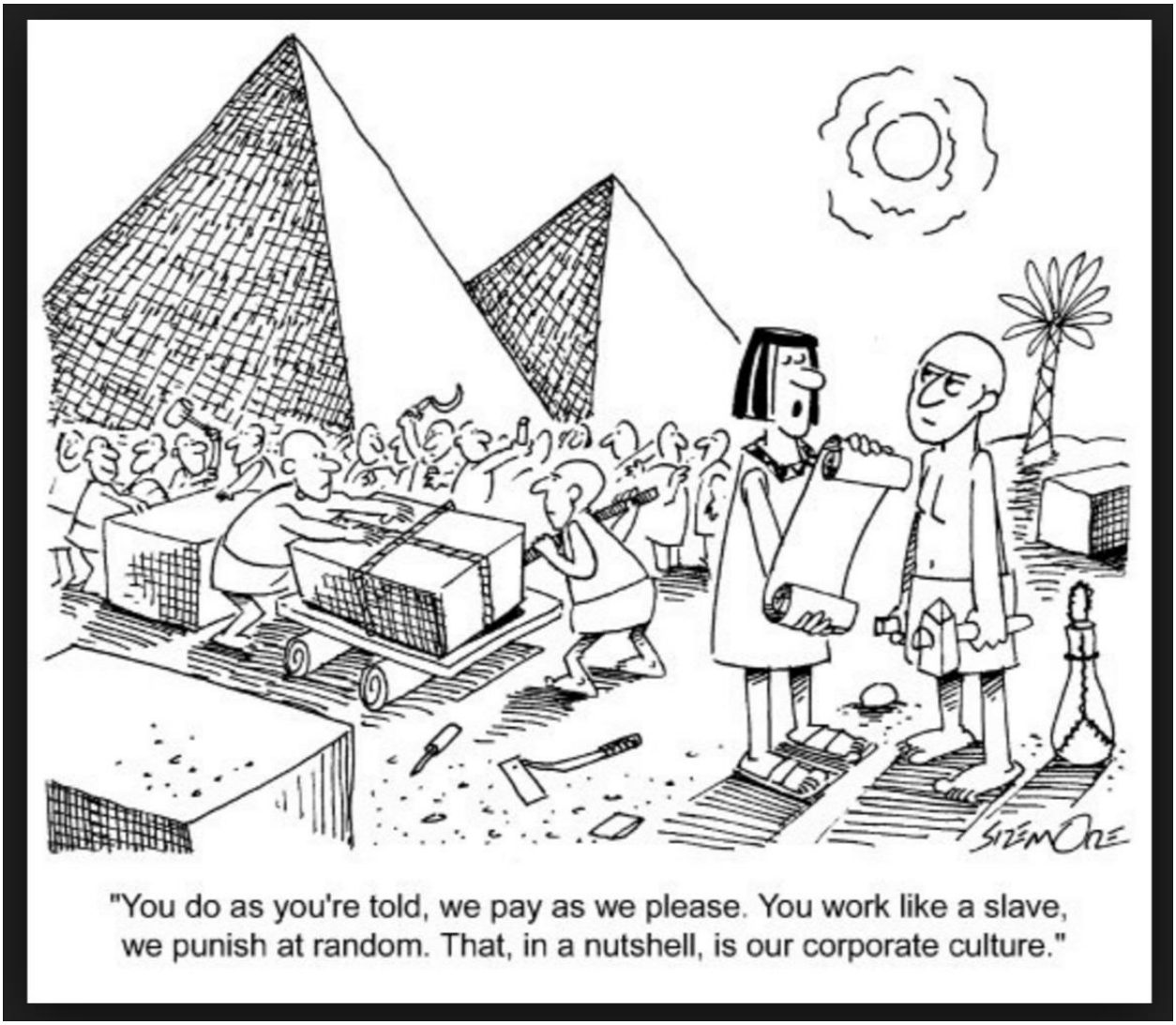


This exercise gave us a very specific roadmap of where to focus our continuous improvement efforts. We focused both kaizen events and leadership audits and activities on the categories needing the most improvement. Now that you've set and communicated your vision for your company's continuous improvement journey, it's time to start implementing the lean management system (LMS) and strategically creating the culture you need to succeed.

Culture

What is the culture of an organization? Business Dictionary says, *"Culture determines what is acceptable or unacceptable, important or unimportant, right or wrong, workable or unworkable.*

It encompasses all learned and shared, explicit or tacit, assumptions, beliefs, knowledge, norms, and values, as well as attitudes, behavior, dress, and language." So if that is the case, who determines the culture? Well, certainly all of the employees do. But ultimately the responsibility for culture lies with the leaders. The culture of any company is determined by the behavior of its leaders. What the leaders do and don't do. What the leaders reward and punish. What the leaders acknowledge and resource vs. what the leaders ignore. In order to change the culture of a company you must change the behavior of its leaders, but not haphazardly or impulsively.



While most of us agree that leader behavior sets the company culture, few of us know where to start if we want to change or improve it. That's where the implementation of the lean management system comes in.

Lean Management System (LMS)

Traditional management practices do not create the cultural shift to daily problem solving that is required to sustain and advance a continuous improvement journey. LMS is an approach to running an organization that supports the concept of continuous improvement; a long-term approach to work that systematically seeks to achieve small, incremental changes in processes in order to improve efficiency and quality. It has several objectives:

- Beyond lean tools, create an organization that embodies the culture of continuously improving customer value and eliminating waste

- Disseminate the skills of successful leadership throughout the entire workforce leveraging capability

- Unlock the potential demonstrated in the islands of improvement in your company and tie them together into an entire organization of people focused on improvement towards a common goal every day

- Engage each and every leader in the lean transformation process, beyond delegation and project management, so that performance improvements do not plateau and true cultural transformation takes place

The Lean Management System has four key components:

1. Leader Standard Work
2. Visual Controls
3. Tiered Management System
4. Leadership Discipline

We'll take them one by one.

Leader Standard Work

Leader standard work is the first component of LMS and its goal is to help leaders adopt predictable, repeatable standard activities to build employees' problem solving muscle and move them towards daily continuous improvement. These activities must focus leaders on the real time process at the gemba, not on the weekly, monthly, quarterly results that leaders so often obsess about instead. LSW does not imply that the results are not important, simply that by focusing on the process real time, you can course correct and make daily improvements, thus ensuring that the results you seek are actually achieved and basically take care of themselves. Just as operators have standard work for their value-adding activities, leaders need standard work too. Leader Standard Work (LSW) is very similar, yet importantly different from operator standard work. The key characteristics of LSW are:

- A list of the normal tasks done with the least amount of waste at the current time
- Expected to be continually improved

- Number of times each task should be completed (frequency)
- Focuses on the employee, not the equipment or materials
- Reduces variation, increases consistency
- Sustains the process (including quality)

The most important differences between LSW and operator standard work are that LSW defines how often a leadership task should be completed vs. operator standard work which usually defines how long it should take to complete a task. Also LSW focuses the leader on sustainment ***and*** improvement activities, whereas operator standard work focuses on sustainment. The key leadership activities that makeup LSW are:

- Gemba walks
- Audits
- Andon response
- Accountability meetings
- Mentoring

So right about now, some lean executives will look at the list above and say to themselves, "I do all of those things. I don't need leader standard work." But do you do them enough and do you do them consistently? The truth is most leaders do not and that is why LSW is so important to the lean management system.

The amount of time that leaders spend on LSW should vary by position. Below is an example of this variation by position in a typical company.

Role	% of Work (time) that should be standard
Executives	**10-15 %**
Plant Manager	**25 %**
Support Department Managers	**50 %**
Supervisors	**50 %**
Team Leaders	**80 %**
Operators (Associates)	**95+ %**

Likewise the structure and content of the LSW varies by position, with less structure at the executive level and more structure at the team leader level. Executive LSW is very flexible as to when and in what order tasks are completed whereas team leader LSW is often very structured as to the order and time of day of tasks.

LSW should always be layered from the bottom up. This means that you should be begin by getting operator standard work in place first. Once that is done, you can then create LSW for team leaders, then supervisors, then managers, and finally executives. Why do it in this order? LSW is meant to be layered with interlocking activities between layers of the organization. LSW should focus each layer of the organization on doing activities to support and ensure the successful sustainment and continuous improvement activity of the layer below. In other words, Team Leader LSW should focus on the operators and their ability to be successful following their standard work. Supervisor LSW should focus on Team Leaders and their ability to successfully complete their LSW. Managers should focus on Supervisors and their ability to successfully complete their LSW. And Executive LSW should focus on the Gemba and ensure all levels of the chain of LSW are intact, sustaining and improving processes. These interlocking layers are essential to provide consistency and alignment of leadership activities towards the continuous improvement vision of the company.

Let's take a specific example. A few years ago I assisted a company in the glass manufacturing industry. They wanted to roll out LSW for their company but had no idea where to start. So I asked them, "What is your biggest headache?" Without hesitation they answered, "Safety!" So I suggested they roll out LSW with an emphasis on safety. Below is what they came up with.

Each column represents the LSW for a different level of leader in their company. Notice how the quantity of tasks for the "Lead" is much higher than the quantity of tasks for the "Director." More importantly note how the tasks overlap. Each layer audits the "S.W." of the layer below and each layer also conducts some audits also done by layers below. This provides consistency, alignment and support.

In some cultures, audits send the message that: "We don't trust you, so we are checking up on you!" They are seen as policing and are therefore resented. In healthy cultures, audits are done in the spirit of PDCA (Plan, Do, Check, Act). They are the "Check" part of this process. Why? Because in business as in life, Murphy shows up. Things happen outside of our control (machines break down, people get sick, old man weather snows 10 inches and parts don't arrive, etc.). The audit or "check" step in the PDCA process allows us to catch abnormalities in our processes immediately and course correct as well as root cause, problem solve to prevent those abnormalities from ever happening again for the same root cause (though I do not submit that you can ever control the weather.) This checking activity ensures we do everything in our power to achieve our results and therefore our vision. What determines the difference in how audits are perceived? It's all about how leaders react. Are you perceived as punishing the behavior? Or, do you emphasize the importance of sustainment and roll up your sleeves and assist with process improvement to ensure we do not get derailed for the same reason again?

So now you are about to start creating LSW for your Team Leaders. Where should you begin? The first thing to keep in mind is that LSW for every level of the organization should focus on two important things: 1) ensuring the process runs the way it was designed to run (SUSTAINMENT) and 2) improving the process. Ahhhh, back to that work "Sustainment." Why is it so hard? Because the 2nd Law of thermodynamics suggests that sustainment is unattainable. It says that even if we follow standard work, a process left alone will slip toward chaos. No matter what, there will be problems that operators will have to work around and that ultimately the process will decay. In other words, there is no such thing as sustainment, you are either getting better or you are getting worse. So LSW should be focused on 1) ensuring there is no decay and more importantly 2) ensuring we are working on the next level of improvement.

LSW for Team Leaders typically involves tasks concerned with the start and stop of the production day, tasks focused on production that are important to repeat throughout the day as well as some time to respond to abnormalities, work on improvements and train operators. It often includes the things listed below:

Once-daily elements

- Lead team startup meeting
- Review, adjust labor plan
- Monitor production start up
- Post tracking sheets
- Attend dept 'board' meeting
- Complete improvement task assignments
- Work on improvement
- Set next day labor plan
- Update Pareto charts

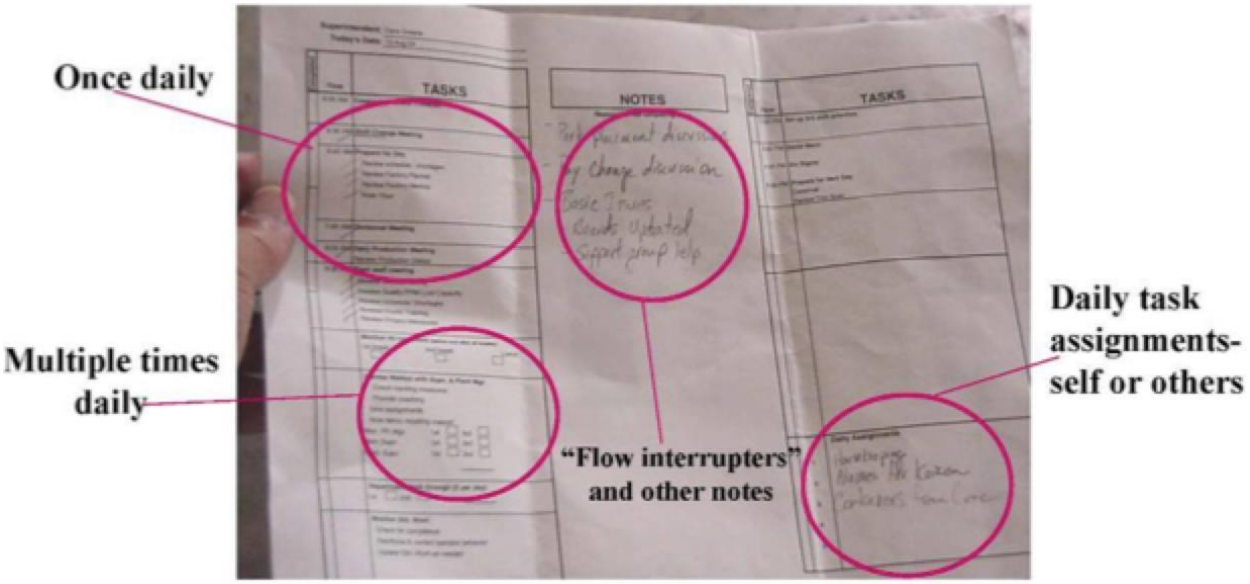
Multiple times a day

- Observe std work each station
- Update performance tracking each pitch
- Monitor start, stop times
- Train operators as needed

LSW for the other layers of management in an organization follow suit. With the primary objective of each other layer being to ensure the layer below is successful with their LSW. Each layer also usually has gemba walks, audits, Andon response, accountability meetings, and mentoring tasks that overlap to the layer below on a less frequent basis, ensuring consistency and alignment across and throughout the organization.

LSW most often takes the form of a checklist allowing every leader in the organization to carry it with them throughout the day. Items on the checklist are typically gemba walks, audits, Andon response, accountability meetings, and mentoring tasks (the elements of LSW listed previously). These are the leadership activities that relate directly to the success of the continuous improvement journey that many leaders struggle to find the time or focus to do. That is why they are on leader standard work. In the class I teach about LSW, the participants and I usually get into some interesting discussions about what to include and not include in LSW. My rule of thumb is this: If you are going to do that task for certain anyway (i.e., it is already so ingrained in your daily leadership habits, example "Check Email"), then do not put it on your LSW. Why? Because LSW is meant to change your behavior as a leader. It is meant to focus you on the lean activities that you should be doing, not on the routine tasks you will do anyway.

Once created, the LSW checklist sets the expectation for what each leader should do every day, week, and month. It's best used as a true checklist: the leader checks off each task as it is completed and notes any interrupters that get in the way causing tasks not to be completed and noting opportunities for process improvement. Commonly, LSW has a section for once a day tasks, tasks repeated throughout the day, weekly or monthly tasks, an area for notes, projects and assignments to others.



I have gathered many examples of LSW formats that companies have created since I was first introduced to the tool of LSW in 2007. I've seen a lot of variety and creativity. But in the eight years I have been teaching the class on LSW, every class of participants has reviewed a set of 10 or more of the samples I have collected and overwhelming they all vote the following format to be their favorite.

Team Leader Standard Work

Name: _____

Date: _____

Time	Daily Task
14:00	☐ Voice & Emails
	☐ Cover vacation calendar & call-in positions
	☐ Review previous days performance
	☐ Complete plan for current day
	☐ Verify previous shift issues resolved
15:00	☐ Confirm all operators arrived on time
	☐ Review days plan w/process support
	☐ Update report(s)
16:00	☐ Audit and initial all HR x HR logs
	☐ Address critical issues from HR x HR logs
16:30	☐ Shop floor
	Hourly Tasks
	☐ Audit & initial each HR x HR log
	☐ Address critical issues from HR x HR logs
	Daily Tasks
	☐ Audit safety compliance w/corrective actions
	☐ Audit 5S compliance w/corrective actions
	☐ Audit break adhereance w/corrective actions
	☐ Walk w/process support audit area & boards
	☐ Implement 1 continuous improvement
	Weekly Tasks
	☐ Process center walk w/Value Stream Mgr
	☐ Coaches corner with operators
	☐ Audit all TPM tasks complete
	☐ Communicate overtime schedule- Monday
	Monthly Tasks
	☐ Complete safety job hazard
	☐ At least 1 safety extra cedit item
	☐ 5S Audits

Notes (continued)

Issues

Notes

Issues (continued)

Time	Calendar
14:00	
	Shift Transfer Between Team Leaders
15:00	
16:00	
17:00	
	LUNCH
18:00	
19:00	
20:00	
21:00	
22:00	
	Shift Transfer Between Team Leaders
23:00	

To Do (assignments)

☐

To Do (continued)

Back:

Notes	Issues	To Do
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In order for LSW to be effective, thought has to be given to the format and to where the documents will be kept so that each layer of leadership can support the layer below in the success of their LSW. Some companies choose to post completed LSW on boards so that adherence to LSW is visual and so that other leaders in the organization can easily audit the LSW of the layers below them. Here are two examples of what other companies have done.

A common reaction most companies get from their leaders when they start discussing leader standard work is "What's in it for me?" The leader is often thinking, "I don't have time! Why would I want to add this to my already full plate and how is it going to make my life as a leader any better?" This reaction is almost always an indication that there is too much firefighting going on in the organization. Firefighting is defined as solving a problem only to have it occur again because we didn't get down to root cause and prevent the problem from ever occurring again for the same root cause. Instead, we reacted to the problem and put a Band-Aid on it. Studies have shown that on average firefighting consumes 55% of a supervisor's workday. No wonder they cringe at the first discussion of LSW.

However, there is a path to gain buy-in from leaders who are resistant to LSW. First, you must involve the leaders in creating their LSW so they own the tasks they are responsible for. It's just like every other tool of lean where involvement leads to buy-in. Second, you must resource a team of other employees who can assist leads and supervisors with root cause problem solving. Slowly, this root cause problem solving and preventing problems for reoccurring reasons, will lead to more time for leaders to complete their LSW. I'm not advocating the hiring of additional staff to resource this activity. However, I am suggesting what amounts to a radical departure for some companies in the behavior and focus of other leaders in the organization. I'm suggesting root cause problem solving teams made up of managers, directors, engineers, executives, etc.

The most important thing is to recognize that your team leaders and supervisors are so consumed by the responsibilities of day-to-day production and firefighting that they cannot be expected to be successful with LSW without support from other resources. The beautiful thing is that as more and more problems are resolved at root cause, slowly, the team leaders and supervisors get more time to do continuous improvement activities following their LSW because they are doing less firefighting. This ultimately allows all leaders in the company to focus on LSW, adopting predictable, repeatable standard activities to build employee's problem-solving muscle and move the entire company towards daily continuous improvement.

Finally, let's discuss the benefits of LSW.

- When used correctly, it's a powerful tool to help leaders shift their focus on the process first, before results.
- It trains leaders to focus on the process real time to identify abnormalities immediately in order to course correct and root-cause problem solve.
- It provides continuity of operations when leaders are absent (someone else can follow their LSW).
- It raises the bar for leadership, clearly identifying what is important and expected in terms of performance.
- Most importantly, it helps the organization to identify who will and who will not make the transition to the new lean management system.

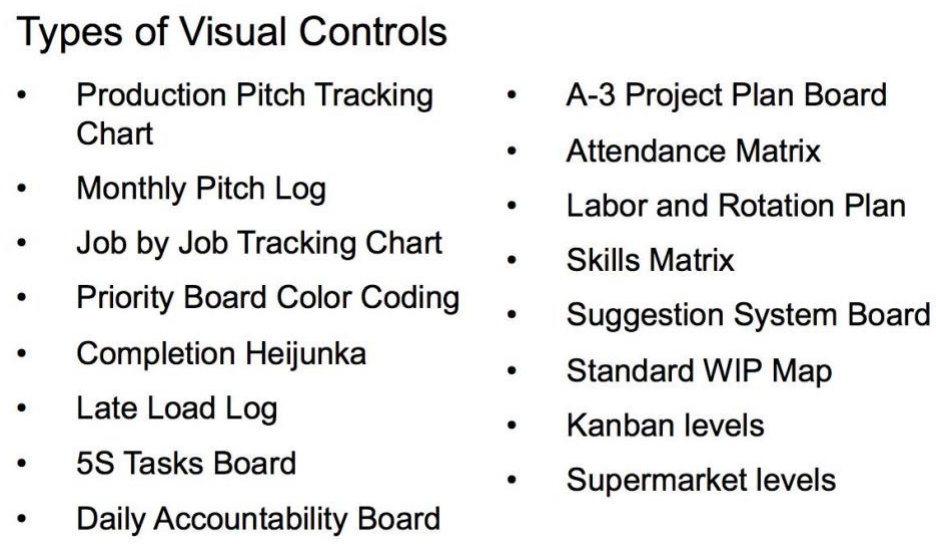
David Mann suggests that 10-20% of leaders in the average manufacturing company cannot or will not make the transition in leadership behavior. In my personal experience, that % is low. I've experienced a rate closer to 50% of leaders are not able to make the transition. I've seen some leaders that I was very skeptical of, with lots of coaching and mentoring, turn into lean

superstars. I've also seen leaders I was convinced were on board, fail miserably and reveal themselves as CAVE dwellers: Citizens Against Virtually Everything (CAVE). These employees are sometimes blatantly obvious and at other times not. It is ultimately up to you and your management team to decide what to do with such leaders. The recommendation is to move them out of your organization or at the very least out of a position of leadership. Anything less undermines the strength of your lean management system and therefore the success of your continuous improvement journey.

Visual Controls

Visual controls are the second key component of the lean management system. They provide information to employees that either force or incline leaders to act or react. Visual controls are used so that no problems are hidden. They are designed to quickly communicate information to employees, indicating whether a condition is acceptable or not acceptable, and, equally as quickly, provide some direction about actions that should be taken. Let me paint a picture. You have visual control in your organization, if I, as an outsider, not knowing your business, can walk the halls and shop floor of your company and tell whether each department is operating in a red or green state (on schedule with no problems – green; or behind schedule with problems – red). If I cannot do that, you do not have visual control.

There are many different types of visual controls in a typical manufacturing company. The list below is just a start to get your wheels turning.



The key here is that LSW must take you to the visuals in your operation. Checking on the key visuals in your operation helps all leaders know whether the process is running as designed (green state) or whether the process has encountered a problem (red state) and needs help to first, get back on track (back on schedule), and second, problem solve to root cause so we never get off track again for the same root cause problem.

Good visuals always show the actual state vs. the expected state. The leader's job when checking or auditing the visual is first to ensure that the tracking is being maintained, it is up to

date and that any abnormalities have been documented. Then the leader should ensure that appropriate countermeasures and corrective actions have been taken to get back on track and problem solve to root cause. The best visual controls can be seen from 10 ft. away or more. Whiteboards, flipcharts, Andon lights and large electronic TV screens are the best. Anything smaller is usually buried so far within the operation that it is not considered true visual control.

Daily Accountability

Daily Accountability is the third important component of the lean management system. It is typically three tiers of leadership in a company meeting daily to assess performance, identify abnormalities and resource root cause problem solving to ensure abnormalities do not happen again for the same reason. In a typical company they look like this:

- Tier 1: Team Start Up Meeting
  - Team leader meets briefly with team members/operators/associates
- Tier 2: Supervisor Meeting
  - Supervisor meets with team leaders and dedicated support personnel (engineering, maintenance, materials, etc.)
- Tier 3: Value Stream
  - Plant Manager with supervisors and support department managers

Each meeting is brief, approximately 10-30 minutes or less, stand up, on the shop floor in front of tracking metrics boards pertinent to that group with an accountability board, see the photo below.

Typically each metric (usually quality, cost, delivery and safety) is reviewed and assessed to be on track (green) or off track (red). If red, it is expected that one or more action items are put on the accountability board and assigned to a named employee with a due date.

Daily Accountability Board

Accountability boards like the one above are used to track root cause problem solving action items. They are assigned to a specific employee (y/vertical axis) and given a due date that the employee agrees to (x/horizontal access). When the deadline comes the team asks: "is it done or not done?" If done, the Post-it with the task is removed from the board. Congratulations! If the task is not done – well, this is where accountability comes in and where these boards work or don't work. In companies where they don't work so well, the deadline is moved out and the Post-it note is moved to the new date. In companies where they do work well, the employee is professionally challenged: "why is the task not complete?" "Why did you not ask for help well before the deadline?" When leaders and other employees hold their colleagues accountable to complete tasks on or before due dates, magic happens. Tasks get completed on time or employees ensure they do not agree to take on tasks without sufficient time to be successful. Or, they negotiate to accept a smaller portion of the task that they can complete on time. Accountability is difficult because it requires confrontation. But once it is established in a healthy organization, continuous improvement and organizational success become a way of life.

Leadership Discipline

"We are what we repeatedly do. Excellence, then, is not an act, but a habit."-Aristotle

The fourth and final component of the lean management system is discipline. There are many definitions for the word "discipline." In a lean business the definition that fits the best is: "orderly or prescribed conduct or pattern of behavior." In other words, leadership discipline means the structured, expected and consistent behavior of leaders. LSW is simply a tool that sets forth the expectation of that behavior, then tracks the leaders actual behavior so that all layers of management can assess whether the behavioral goals are being achieved or not. And, if not, why not? What interrupters are causing the leader to struggle in the execution of their LSW? And, most importantly, how can we help?

Please remember as you evaluate your leaders and their adherence to the execution of LSW that most leaders who struggle do so because firefighting gets in their way. Again, that is a symptom of the top leadership of the company not focusing on and providing enough resources for root cause problem solving of process abnormalities. Once in a while, it is evidence of a CAVE dweller and that has to be dealt with in a different manner which aligns with the values of the organization.

Lessons Learned

During my 22 years of manufacturing experience I've worked for and implemented lean journeys in two small (approx. 100 employees) manufacturing companies, both privately held and family-owned with second generations involved in running the business. My experience was dramatically different in both companies. One was a company manufacturing products for the automotive industry where continuous one piece flow through the factory was achievable. In that environment where 80% of orders were make-to-stock and 20% were make-to-order, Takt time and standard WIP were keys to success. The other was in a contract manufacturing business to the defense, aerospace and healthcare industries where Takt time did not apply, setup reduction was critical, and quality and on-time delivery were paramount.

In the first high volume, low mix environment, my introduction to lean was through a high profile consulting firm that taught us Lean 101 and how to do kaizen events on the shop floor and in the business processes. This was a great way for us to learn the tools of lean, but left the organization dependent on the next scheduled kaizen event for improvement. It did not result in employee's doing daily problem solving and continuous improvement. When we tried to implement an employee-based daily improvement program there, along with leader standard work, it did not really take off. Why? Because we did not have a lean management system nor an executive team intimately engaged on a day-to-day, roll-up- your-sleeves basis at the gemba - where the work gets done. The lesson learned here was that it's not enough for top executive leadership to embrace and resource continuous improvement, they have to be actively engaged in it. I mean the President and VPs of the company walking the shop floor often, daily or at least multiple times a week, conversing with the employees to understand what gets in their way, observing the state of production to the schedule (green or red) and taking measures to get us back on track or improve.

I experienced a lean journey in the second company that had a unique history all its own. In 2004 they too contracted a consulting firm to teach them how to do lean - and it did not go so well. Employees resented being forced to use TAKT time to pace production in a job shop environment. By 2009 the company hit a dangerous revenue and profit low point and the continuous improvement program had all but disintegrated save for a few cellular manufacturing areas with repetitive products. In fact, if you asked employees the definition of 5S they would tell you, "It means I have to throw away something today that I will need a year from now."

In 2013, a new President was brought in to turn the company around. His background included the running of Fortune 500 companies as well as more than 10 years with a top profile lean consulting firm. He immediately switched our company into "guerilla lean". We didn't call it lean, but we implemented many of the tools of lean to improve the manufacturing processes of the company including: 5S, production-to-expected run times, root cause problem solving, daily accountability, and much more. None of this was done under the auspices of a lean program, just a leadership commitment to make the company profitable and share that profit with employees. This was accomplished by the President, General Manager and all layers of management being actively engaged on the shop floor on a daily basis, monitoring production to schedule, identifying abnormalities to course correct, implementing improvements to resolve root cause problems and driving continuous improvement. In 2 years' time, a major financial turnaround was achieved and the company grew by more than 20%.

These experiences have taught me that leadership behavior and involvement make all the difference. The best ways to achieve this are through implementation of the lean management system, especially leaders standard work. But, you do not need to think of these implementations as formal. Success can be achieved through guerilla tactics – implementing a lean management system and the desired leadership behavior of "standard work" without the forms and checklists. It's all a matter of what works best in your corporate culture. Smaller companies can be successful with the guerilla approach; most large organizations require a formal program. Regardless, it still comes down to leadership's active participation, commitment and accountability.

"Leadership is not magnetic personality that can just as well be a glib tongue. It is not "making friends and influencing people." That is flattery. Leadership is lifting a person's vision to higher sights, the raising of a person's performance to a higher standard, the building of a personality beyond its normal limitations."

— Peter F. Drucker

Section 2 - Sustaining a Culture of Continuous Improvement

Chapter 5

Sustainment Systems

Didier Rabino is Vice President, Lean Sensei at HealthEast Care System in St Paul, Minnesota. He coaches senior executives to build and deploy Lean systems in order to improve patient care. Prior to holding this position, Didier was Plant Manager at Andersen Corporation in Wisconsin and led the company's Lean Office to develop and deploy the Andersen Manufacturing System. He also spent 13 years with Steelcase in Europe and Michigan as one of the handful Lean pioneers who launched the Steelcase Production System.

Didier holds a Wood Mechanical Engineering degree from the University of Nancy, France, a Business degree from the University of Perpignan, France and a Master's degree in Industrial Sciences from the Pasteur University in Strasbourg, France. He obtained Lean certificates from the University of Michigan, the University of Tennessee, and Kellogg University. Didier is also Lean bronze certified and 3P Shingojutsu certified. In June 2015, Didier became the 27th recipient of the prestigious IIE 2015 Honorary Member Award. Among past recipients are Lee A. Iacocca, W. Edwards Deming, W. Von Braun, Herbert C. Hoover and Lillian M. Gilbreth.

Why do you think it is difficult to improve a process or a system?

Improvements would certainly be easier if we did not have to sustain the changes. Unfortunately, the tendency of every process is to want to go back to its initial stage. Past routines are difficult to break. Neuroscience provides an explanation. Our brains use our routines to develop synapses that allow us to almost operate in cruise control. We feel so comfortable with routine work that we almost forget about it. It is second nature. This can be a good thing, because this frees up our mind. It can however be detrimental when it is time to change. For example, if you are like me, you may have automatically followed your regular route to work when you were supposed to go somewhere else.

We need help to break our routines and patterns of thinking. With Lean implementation, when improvement is continuous, I found that help can come in multiple ways. It commonly comes from visual controls, process feedback, and Leader standard work. These concepts help us break old routines and over time create new ones to sustain the new standards, the new way of doing the work.

What was one of the biggest changes you facilitated that required a system wide approach?

In September 2012, when I joined HealthEast, I learned that one of the 5 key objectives of the organization was to have 4,900 ideas submitted by the frontline employees in one year. We wanted to change the culture and this was indeed a great target to embark into a culture of daily continuous improvement. I remember the proposal from a senior leader to give an improvement card to each of our 7,200 employees. We could very easily ask each employee to write an idea on this piece of paper, a card, and submit it within the next 12 months. We would definitely reach the 4,900 idea target. But was it what we really wanted? Was writing ideas on a piece of paper and submitting them progress toward a culture of continuous improvement? The strategy of "management by objective" was sticking its ugly head up again! Most of the Lean principles (i.e. systemic thinking, respect for people, embrace scientific thinking) were going to be left behind by solving the wrong problem.

How did you change the thinking?

I suggested that we needed to develop a system in which the improvement cards would just be part of that system. The system needed to be geared toward improving processes that matter for the people doing the work. The cards are just the reflection of the idea but we would like the ideas to be connected to the processes – if possible to processes that matter most to us as a company.

What did you achieve by following this approach?

At the end of the first year, 17,000 ideas were implemented. This number was well above the 4,900 ideas targeted. The system is now in its fourth year of existence and the number of ideas keeps growing. The velocity of ideas implemented is continuously growing. In a typical day, 100 ideas are implemented. Last year, in 2015, 37,000 ideas were implemented. In May 2016, we passed the milestone of 100,000 ideas implemented since the launch. This is impressive performance in less than 4 years.

Going back to designing a sustainable system, what did you exactly do?

We first developed the tools – an idea board; a metric board with run charts for each type of metric – quality, customer experience, engagement, and cost. Then we did some quick experiments to test what worked and what did not work well – I'd already had the experience of using these tools at other organizations - so we adapted them. We made an assembly line to make all the tools, the cards, the boards etc. We created binders with training materials to be provided to each and every one of our 450 leaders. We developed a four-hour workshop and took the leaders and divided them into several groups. During these workshops they learned the fundamentals of the daily management system. We taught them what a basic process is, a series of steps taken to achieve an expected outcome, and they started to discover what their core processes were in their own departments.

Were there specific skills or knowledge fundamentals you needed to provide?

Yes, we taught leaders that in order to achieve best practices of continuous improvement; we would have to measure their processes daily – not monthly. It was important to dive into process issues timely, as close as possible to real time. We worked through different examples and case studies to help them answer questions like:

- How could you measure your process?
- How could you analyze your metric, i.e., what is your target?
- What problems do we have?
- How do we prioritize problem elimination?
- Where is the best place to display your metric board?
- How do we explain metric boards to the frontline teams? What is it about and why do we have it?

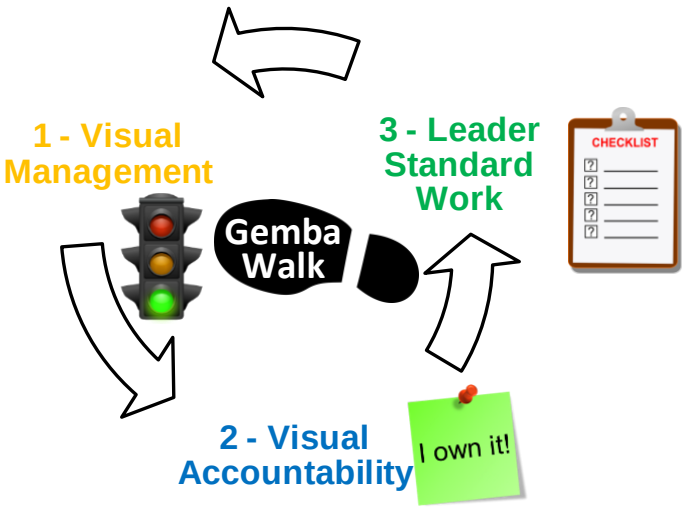
As part of the training, they learned that ideas submitted must be part of a *system* to avoid the "one and done" syndrome. Consequently, we designed a 5-step process that would become the foundation of the daily management system:

- Measure,
- Analyze,
- Huddle,
- Experiment and …
- Improve.

The system was made of interconnected tools for the frontline to use. Such as:

- Run-chart with Pareto chart,
- Metric board,
- Improvement idea cards,
- Improvement board and
- Huddle standard work.

So, when the leaders left the workshop they took their metric boards and idea boards and set them up in their areas so they could start the next day.



Did this guarantee success?

Certainly not! Mark Twain said "experience is what you get by making mistakes." Well, I certainly had a lot of experience on this topic. I started using a daily management system in 1999. I deployed it at Steelcase, Andersen Windows and it helped many other organizations in the Twin cities. By making mistake after mistake, I acquired a lot of experience on this matter but

always tried to not make the same mistake twice. I decided to pull a few tricks from my Lean bag:

1. Visual management,
2. Visual accountability,
3. Leader Standard Work and
4. gemba walk

1. Visual Management - at the Frontline

Visual management because what is important needs to be seen. In the case of frontline management, the main visual components of the system are:

a. The metrics of the process to be improved

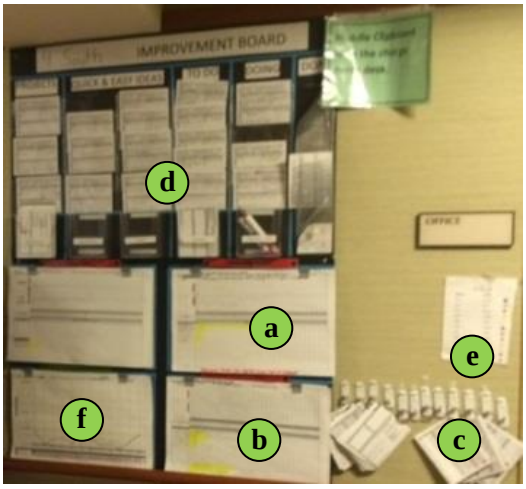
b. The Pareto chart analyzing the main causes

c. The improvement card making each idea visible, as well as the thinking used to problem solve

d. The improvement board showing the stage of each card, from submitted to implemented

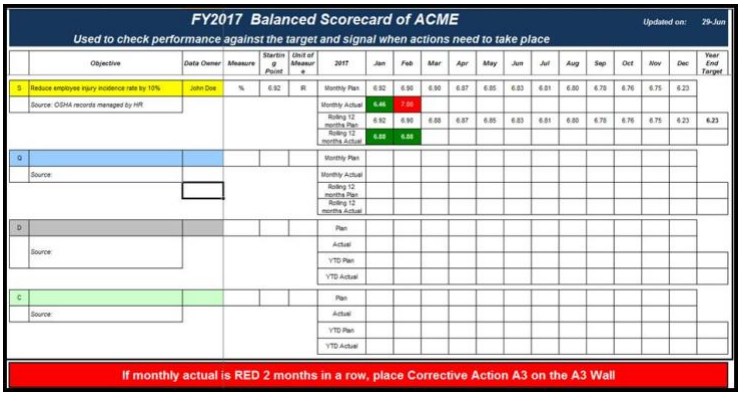
e. The huddle form from the previous team meeting hangs next to the boards

f. The velocity of the team at improving their processes



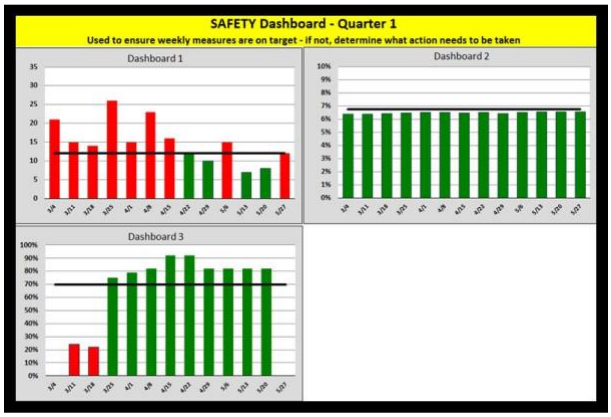
2. Visual Accountability - To reinforce new behaviors

Visual Accountability is important to cascade, elevate or simply define responsibility and ownership. In the case of the Frontline Management System, it was important to create a set of tools to reinforce the necessary supportive leadership. Besides the Leader Standard Work, and the gemba walk that we will discuss later, we integrated the development of the continuous improvement culture in our strategy deployment system. The number of ideas submitted became one of the key performance indicators (KPI's.) As such, it was one of the scorecard targets cascaded through the organization from the C suite to the heads of departments.



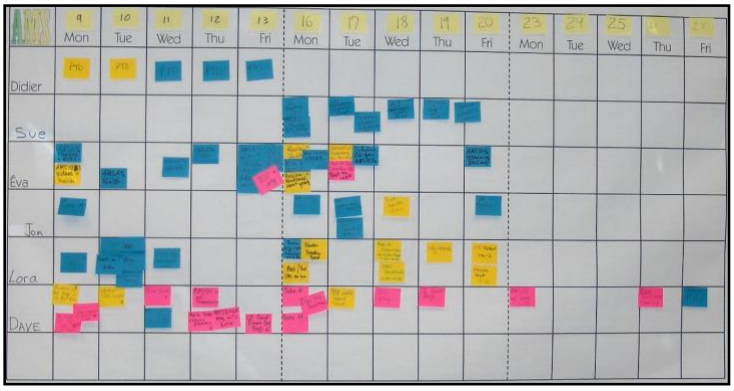
Example of scorecard

Over the years, I learned that KPI's were necessary but not sufficient. KPI's are lagging indicators. Leaders solely driven by results will find ways to "make the numbers." This could be to the detriment of the culture we are trying to build. Key Behavior Indicators (KBI's) are nice complements to KPI's. Because they indicate *how* results are achieved, they can be nice *leading* indicators. Especially if they are measured weekly to reinforce the habits we want to develop. Some of the Key Behavior Indicators we selected were the percentage of frontline teams visited during the past 4 weeks by department leaders, the velocity or aging of the ideas (less than one month) and the connection of ideas to the improvement metrics.



Example of weekly dashboard

With the scorecard and dashboard reviewed at each weekly strategy deployment review, there was little doubt the behaviors would be systematically reinforced or corrected. We had developed a self-sustaining accountability system. Whenever actions needed to be taken (red scorecard or dashboard), the decision would be written on a sticky note and displayed in front of the action owner and below the due date or reporting date. This created a second level of visual accountability.



Example of Accountability Board

Visual accountability systems connect roles and responsibilities. In this situation:

- Frontline employees are accountable to improve the process. This is seen with the improvement card and run charts
- Frontline leaders coach on how to improve and support employees in this work. This is seen with the velocity of the improvement cards, the quality of problem solving and the run charts trend.

- The department leaders train the frontline leaders how to coach and are visible in the gemba. The performance of their teams is seen on the monthly scorecard and their compliance to the defined behaviors can be seen on the weekly dashboard.
- Business Unit Leaders use the weekly strategy deployment review to assess both results and behaviors. If the results fall short of the expected targets, the Business Unit Leaders conduct a systematic, root-cause analysis to identify the origin of the problem, the causes and the corrective actions. Their decisions can be seen on the accountability board.

3. Leader Standard Work – to Support the Frontline

Leader standard work is like training wheels on a bike. It helps create new routines and abandon habits from the traditional management systems that have become obsolete. It is especially important to develop a new culture, to move many leaders toward a new way of acting and thinking. It is also a necessity for leaders to feel comfortable with new expectations. Leader standard work is recorded on a document that the leader carries with them and uses during the day. The document should also state the desired outcome of the standard. I often state the expected behaviors it should drive. For example, the standard work for the director will state something like "Assure the frontline leader uses the frontline management system to improve processes and develop frontline team members in using PDCA." The leader standard work is built from bottom up and designed to provide supportive leadership. As such, directors are expected to visit the frontline leaders and their teams, make personal connections, assess situations and coach the frontline leaders. By their presence alone, they reinforce the frontline management system.

In order to provide leadership capacity and structure, we implemented a daily "no meeting zone" from 9:00 am to 11:00 am. The objective of the "no meeting zone," which is organized companywide, is to provide time for leaders to be present in gemba, the place where the real work is done, without being taken away by another meeting.

Leader standard work is built on the supportive leadership model

Depending on their roles, leaders use leader standard work to accomplish their diverse responsibilities. Some examples are:

- Conduct the huddle,
- Gemba walk the frontline team,

- Update the spreadsheets, scorecard and dashboards,
- Lead the weekly Business Unit review,
- Conduct the root cause analysis.

These standards have a single owner in the organization. The role of the owner is to continuously evaluate actual behaviors against targeted behaviors to eliminate knowledge gaps and to adjust the tools.

4. Gemba Walk – Go See, Ask Why and Show Respect

In the previous pages, I defined three elements to sustain Lean changes: Visual Management, Visual Accountability, and Leader Standard Work. It is important to recognize that these three elements live in gemba. If traditional leaders used to "lead the gemba", then Lean leaders "lead *from* the gimbal." Everything is grounded to the real place, where frontline employees create value and are expected to continuously challenge the processes used to create value.

The next question was how do we sustain that level of effort?

We didn't want to have the "Lean Police" saying "hey, Bob's team is not doing it." They have the knowledge. Now they need the *will* to follow through.

How do you design the process so it works on its own?

We did a couple of things. We told the frontline leaders' leaders that their responsibility in the daily management system is to coach. They need to provide supportive leadership by inspecting what they expect. They also need to ensure that the process metrics being improved are aligned with the organization's objectives. So we are asking you to gemba walk (go see) each of your boards once a month – is that reasonable? After visiting your team and coaching them - as part of your standardized work, please enter your data on a spreadsheet.

If your process metric is below target, then it shows red on the spreadsheet. The spreadsheet acts as a visual control. If the area is red for 2 months in a row, it automatically drives a corrective action plan. Likewise, we have the same type of measurement with target goals for the number of improvement ideas submitted. These were visible because we had the management system updated weekly based on the metrics boards and dash boards in the different areas – they became self-maintaining. This information was displayed on a bar graph and was reviewed at the Department Level, the Business Unit Level and Corporate Level once a week. That was one way we kept management connected to the "troops." Data was displayed on a spread sheet and posted on a wall where the leaders had a meeting every Tuesday at 1 p.m. to ensure there was a connection between the floor metrics and the company goals.

For sustainment, you want to:

- Have clear expectations of Leaders Standardized work that defines what they are responsible for and capable of doing;
- Visual controls so we have visibility of problems by everyone at a glance; and an

- Accountability system that defines who is responsible for what needs to happen.

For example – if you have a gas gauge that shows a light – there is a system and a reaction that needs to happen – stop at the next gas station. So, how do we weave that into the system so we can maintain that control? We have had this system for 3.5 years at HealthEast and last year we and 33,000 ideas implemented. Each year we have been improving by an average of 15%. We continually improve the systems but we are not engaged in the day-to-day maintenance because we have leader standard work, visual management and visual controls and accountability within the system. We had 300 teams, 27 departments, 8 business units and 1 company – everything is connected – accountability based on the Business Units across all levels of the company from senior management to department reviews.

Specifically, every five weeks the team members present to the departments and we go to visit one of the frontline teams. We visit two departments each week so all departments are visited every 5 weeks. It didn't take much to get upper management to start doing the visits because they are accountable to achieve their results. They saw the value of providing coaching and guidance by asking:

- What is going on? What are the biggest issues you have within your department? What are your top two hot spots?
- What is the target? What is the actual condition? What obstacles are preventing you from reaching the target?
- What have you tried? What have you learned? What are you going to try next?
- What help do you need from me?

So basically this standardized work leads to helping with the improvements. Management needs to know that all of the metrics across all of the levels of all the departments are all aligned to the scorecard of the organization – the SQDC – Safety, Quality, Delivery and Cost. When this is the case, quality for the internal customers will improve. For example, what does HR need to supply the operations group? …suitable candidates that need minimal training to get up to speed in the department. OK, so how do we measure that and how does it affect the quality of the whole organization? The key is to have alignment across all levels regarding these metrics. To drive alignment we have the balanced scorecard and we use the metric board and the dash boards to connect to the scorecard. So, this is the metric at the business level – what can you do in your department to support this initiative?

How do top-level scorecards connect to the strategic plans?

We start with a vision for what we want in ten years, and that drives milestones marking what we want to achieve this year. Milestones are based on the Value Stream Maps. Looking at what we learned from last year in terms of process improvements, we identify targets for the coming year of the company. Those targets are cascaded down to the business units and we make sure that some of the department goals will feed back into the company goals. Check that the activities are in alignment with our strategic vision. Once there is alignment, the business units do the same with the departments and that is communicated to the front line teams – this is what we

committed to achieve as a department. Ask: what process will we need to improve to support your team?

How do you deal with shifting priorities throughout the year?

We start with a plan. But, we have a saying "plans are worthless - but planning is everything!" The key is to review the plan once a week and examine them more deeply each month. If we need to adjust, we will adjust. It's usually not a big adjustment, unless something huge happened externally to the company. For example, the IT bubble burst, or, if the plan is in the red for two months in a row - it means the plan is not working and we need to correct it.

So, this is an example of a proven Lean Management system. Now, you can envision your own.

Chapter 6

Creating a Sustainable Continuous Improvement Culture

Tim Keran - Owner, Altus Business Advisors, St. Paul, MN www.altusba.com

Tim has 25+ years of executive management experience and has been on his own personal continuous improvement journey since 1987. His passion is helping owners who want to "turn up" their businesses and increase their ROI and peace of mind. He turned up his own business by focusing on the fundamentals, continuous improvement and building a fun, rewarding and winning work culture. Now he helps other owners of small and mid-market companies navigate the ups and downs of managing a business.

Prior to Altus, Tim owned Western Graphics, a 50-employee, general commercial printing company. He focused on building a fun, rewarding and winning work culture. Western was a seven time winner of PIA's Best Workplace in the Americas and won the prestigious Manufacturer of the Year and Best Lean Culture awards from the Manufacturers Alliance.

I worked at Western Graphics for twenty nine years and owned it for the last fifteen years before selling it in early 2016 to a friendly competitor. We implemented lean in the summer of 2007 and it was one of our significant successes.

Lean is surprisingly simple, repeatable and teachable. To me, it is simply fixing what bugs you every day. The phrase 'Zero Struggle' has been used to describe the end goal of lean. Interestingly, lean has more to do with subtraction than addition. By subtraction I am referencing the common 7 wastes found in companies today:

1. Transport
2. Inventory
3. Motion
4. Waiting
5. Over-production
6. Over-processing
7. Defects

I've heard (and believe) that the 8th waste is unused employee ideas. Some experts believe that 90% of what we do is non-value-added waste - stuff that our customers don't want to pay for. They might be on to something. Look at the above list. Do your customers want to pay for any of those activities?

Waste is passed on by higher prices or lower profits. Neither is acceptable. Hence the phrase: War on Waste.

Sustaining a continuous improvement or lean journey is the hardest part of becoming a leaner company. I am very proud that we never came off our nine year continuous improvement journey at Western. I've found that there is a common list of what knocks companies off their quest to become and stay lean. They are:

- Change in lean leadership
- Acquisition or divestiture
- Change in senior leadership
- Economic downturn
- ERP implementation

But why would something as successful and valuable as lean get shown the door when a major change happens? Many would argue that lean is even more valuable when tougher times appear. I believe the reason lean isn't sustainable during one of the changes noted above is simply that lean isn't in the culture of the company yet. It is still in the company's process toolbox and has not been interwoven into the operating fabric of how the company does business - regardless of what ups and downs it encounters.

Doubling Down on Lean

One of the lucky things that happened at Western was that we started lean right before the Great Recession began. We decided if we couldn't get bigger during this time, we certainly could get better. It became doubly important to our future because we were in a tough industry (commercial printing) that was going through its own systemic changes.

We used three strategies at Western to get lean out of the toolbox and into our culture. They were:

1. Get Everyone Involved
2. Make Getting Better Fun, Make it a Game
3. Communicate and Connect the Dots

Strategy #1 - Getting Everyone Involved

We had an exciting first year on our journey to improve. We went through the buffet line of lean tools and began trying things like: 5S, Value Stream Mapping, Kaizen Events, Visual Controls, A3's and many others. We kept what worked and threw out the tools that didn't seem to fit our culture or give us energy. We noticed pretty quickly that the tools didn't seem like they were culture building. Like Tim Kastelle said, "Tools don't solve problems, people do."

We also read a Gallup poll that said 73% of employees are either non-engaged or actively disengaged. This confirmed what we were noticing - that the continuous improvement sustainment problem is a people problem.

Our lean journey began with a lucky break. We started with a Red Tag 5S event where everyone in the company would participate in the biggest spring cleaning project in our history. When we were done 6 weeks later, we had put over 250 cubic yards of stuff in the dumpsters. We had another 200 yards of leftover equipment, furniture, and supplies that we auctioned off to employees.

Everyone was energized and involved. At the next company picnic, I had spouses and significant others coming up to me and telling me that their garages, closets and basements had never been so clean and organized. By accidentally starting off our lean journey with everyone participating, not just the executive team, we had the momentum moving in our favor.

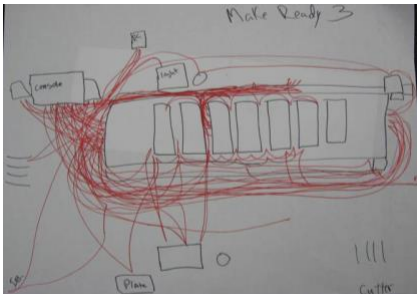
Employee Engagement

Another early success was the decision to move lean out of the executive's hands and into each department where they would be responsible for its success. It was our belief that every employee is a process engineer. Their job was not just to sell, produce, ship, or count - it was also to *improve* what they sold, produced, shipped or counted. It was the department's responsibility to decide what they were going to measure and track and how they were going to attack the goal of getting better on a daily basis. The only requirements were that they had to have:

1. A Daily Huddle
2. A Tracking Scorecard
3. A List of Completed Improvements.

Of course, we had a few employees (and some supervisors too) who said, "We have too much work to do to make time for lean." Our Shigeo Shingo inspired response was simple: "You don't have too much work, you have too much waste."

By the way, ideas didn't count, *only completed improvements counted*. The reason is ideas are a dime a dozen. Our outside janitorial service could have told us what was wrong with Western. Emphasizing improvements over ideas, we got people to take care of their own areas first, instead of writing up ideas for what *everyone else* needed to change.



Another benefit of getting everyone involved happened when we did our first spaghetti diagram. A spaghetti diagram (my favorite lean tool) tracks the movement or steps a person or department physically goes through to make good parts or service from their area. Nothing is more sobering than seeing all of the non-value added steps we have created in a process visually illustrated. If you've ever needed thick skin in business, this is the time. I viewed the diagram on how many steps it took to setup our largest printing press and then called a time out to replace all of the pencils I had snapped. When we reconvened, it dawned on us that the only people qualified to fix and prune back the overgrowth of a process were the employees who actually did the work,

not the executive team or supervisors. It reinforced the value of Strategy #1: Get Everyone Involved. Done right lean is really about the process of growing your people.

"For 30 years they had the work of my hands. They could have had the work of my heart and head for no cost, but they never asked." -Bombardier employee at his retirement party.

Strategy #2 – Make Getting Better Fun, Make it a Game

If lean really is about growing people and fixing what bugs you every day, why can't it be made fun and turned into a game? If success is really about small improvements done on a continuous basis, then it can't be only about the tools.

Business is a game. We keep score. We play 12 games (months) a year. Our future is determined by how we do in those 12 monthly games each year. Is your company going to go 9-3, 6-6 or 2-10 this year?

At Western we made *improvements mandatory*. Making your job, your department and the company better was part of your job description. We knew if people feared this requirement, it was going to make it tougher to get better results. So we made getting better a game.

Everyone was put on a team and each week a team leader would meet with the other team leaders. They would discuss each improvement that their team had made. The team with the most improvements each month was our champion. In the beginning all they had were bragging rights. As a few years went by, we added in an annual theme to make it even more fun. We had annual themes like: *80's Hair Bands, Monopoly, TV Sitcoms, Super Heroes, CSI: St. Paul and* even *Survivor.*

In the year we were "80's Hair Bands" the teams would go head-to-head each month. If Def Leppard had more improvements than Motley Crue then Def Leppard was the headliner and Motley Crue was the warm up band - all month long. In the year we played Monopoly, the Race

Car team would build houses and hotels on their properties with the money they received for each improvement. If the Scottie Dog team landed on their property, they had to give some of their improvement money to the Race Car team. It got loud sometimes at our monthly all - employee improvement meeting with all the cheering, but it made it more fun.

At our 40-minute monthly meeting we did lots of recognition and the teams all got up and gave a report out on their best improvements. Teams spun for small prizes (pizza, gift cards, DQ Blizzards, etc.) on a prize wheel. We gave out Olympic medals to the top improvers and special traveling awards each month.

My favorite was the "Unplugged Award." It was a custom trophy made so that you couldn't put a drain plug that was on a chain back into a pre-drilled hole. It was given to the employees who had the best improvement that got rid of something (unplugged). It had to be something that added no value to the company or customer.

At the end of the year after all of the improvements were turned in, we picked the best 64 improvements out of over 500 improvements. Then we had a NCAA basketball tournament inspired competition until we crowned the winner of the #1 top improvement for the year. All of this helped keep everyone engaged and playing our continuous improvement game.

I've learned that people just want to be part of something that flat out works. Making your continuous improvement journey participatory, a bit competitive and with some good natured ribbing makes it more sticky and sustainable. After all, who wouldn't want to be part of an 80's Hair Band team?

"Lean is not a mechanical system for the elimination of waste. It is a process to change people's minds about the way they see and do their work. It is a platform for improvement, flow and more enjoyment at work." - Paul Akers

Strategy #3 – Communicate & Connect the Dots

Everyone can create profit in a company. We know from our economics class that a dollar saved is a dollar earned. In order to save the right dollars, people have to know how they are doing and how the company is also doing. By sharing the score, people can be asked to help make it better.

One of my favorite quotes is: "Problems are gold. Finding gold makes you rich." Letting others in on the problem areas means we go from just a handful of people to a whole army of people working on our problems.

I've heard that called "Sharing the Insomnia." If we are doing great, we should all sleep soundly. If we aren't doing well, then we should all be getting up occasionally in the middle of the night.

Each of our departments had a lean leader. This team of leaders would meet every week and discuss ideas for improvements and work out any kinks that an improvement had caused. This kept everyone up to date and reduced inadvertent accidents. It also served as a source of inspiration. They would 'borrow' ideas from each other and take them back to their own departments for possible implementation. This cross pollination worked out great and added some light peer pressure as well.

We did a great job communicating. Each employee was in a daily stand-up department huddle (7-10 minutes) and a weekly department meeting. We had a monthly company meeting in which we discussed how we were doing as a company. Additionally, all employees had individual scorecards and quarterly performance reviews. In all of these meetings they would *hear* and *see* the good, the bad and the ugly.

Who	Measurable	Red	Goal (rev.7/2/12)	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep
EA	xxxxxxxxxx	1	2	3	1	1	5	1
EA	xxxxxxxxxx	0	2	7	3	8	7	3
EA	xxxxxxxxxx	$153K	$165,000	$ 207,000	$ 161,000	$ 152,000	$ 157,000	$ 174,000
KW	xxxxxxxxxx	51	55	49	40	62	67	90
JC	xxxxxxxxxx	106	114	137	85	120	104	49
JC	xxxxxxxxxx	161	173	174	165	152	174	166
JC	xxxxxxxxxx	514	553	619	440	435	567	393
JC	xxxxxxxxxx	$963	$900	$ -	$ 427	$ 95	$ 1,519	$ 3,510
JC	xxxxxxxxxx	8	10	9	19	13	15	13
TW	xxxxxxxxxx		5-10%	7.2%	6.0%	8.8%	9.7%	12.7%
MS	xxxxxxxxxx		7.0%	14.3%	11.7%	13.7%	11.4%	8.2%

All of our scorecards had simple key performance indicators and were scored either with a green, yellow or red. Whenever someone would say to me that they were out of improvement ideas, I would say, “Take a look at one of your scorecards (company, department, individual). Where you see a red is where we need an improvement.”

Now they had information *and* tools to help make themselves, their department and the company better.

“You can’t manage for improvement if you don’t measure to see what is getting better and what isn’t?”

Benefits

We experienced some excellent results from our lean journey including all of the following 6 standard benefits plus one of our own:

1. Operational excellence
2. Low turnover
3. Customer retention
4. Consistent reduction in cost
5. Consistent increase in quality
6. Continuous innovation
7. A better, more fun place to work

Some of the financial results for lean are hard to quantify. It’s because if you are doing improvements on the smaller side (more valuable in the long run) it would cost a lot (create over processing waste) to track everything monetarily. My main qualification for staying on the continuous improvement journey was simple: *Did I believe we were better than the prior month?* Invariably, my answer was always yes. Here are a few of the results that were more easily measured.

Lean Results	2008 – 2015
Rework	50% Reduction in Dollars
Sales Per Employee	Increased 28%
Employee Turnover	From 18% to 6%
Lost Time Accidents	0 in Last 5 Years
Improvement Bonus	10 Out of The Last 12 Quarters
Improvements	Over 4,000 Since 2009

Lessons Learned

There are many lessons to be learned on the continuous improvement journey. Too many to list them all, but here are a few:

- Lean is 90% people and 10% tools.
- Problems are gold. Finding gold makes you rich.
- Keep the improvement game simple so everyone can play.
- Stress is bad, but pressure (to get better) is good.
- You stand for what you tolerate.
- Everyone wants to play if it means a better work day with fewer frustrations.
- Everyone can create small, yet significant improvements.
- Customers get excited when someone "is focused on serving me better."
- Making continuous improvement fun makes it sustainable.

"When I ask you to take an aspirin, please don't take the whole bottle. In the golf swing, a tiny change can make a large difference. The natural inclination is to begin to overdo the tiny change that has brought success." –Harvey Penick

Let me end this article with a question for you. If I had a low-cost process that would improve your company dramatically, how interested would you be? A proven process that could:

1. Improve your customer's life
2. Grow your people
3. Take pressure off your leaders to come up with every good idea
4. Make you more money and create more success

Great news! It's **continuous improvement**. Start your journey today!

Epilogue: Lessons Learned

By Art Sneen

In one sense, developing and leading an employee army of Lean problem-solvers is like training an *apprentice carpenter* because:

- A would-be carpenter often starts with some formal trade school like employee problem solvers can start with Lean training where they learn the basic principles, methods and jargon.
- A carpenter then works with an experienced Journeyman like the employees work and learn on-the-job, practicing by doing improvement projects and kaizens.
- Both seek out Master Practitioners for advice or assistance – whether a Master Carpenter or a Lean Leader, consultant or Lean Instructor.
- They both operate to blueprints of some sort – similar to Policy Deployment Matrixes, Value Stream Maps, Bowling Charts and Cascading Metrics or Scorecards.
- Their master work plans come from Architects of some sort – perhaps a Lean Manager, an enlightened Executive or a Sensei.
- Structures and organizations are built and sustained by a team of problem solvers grounded in common principles of creating lasting value.

Closing comment: The Manufacturers Alliance association was founded on and exemplified by the type of leaders aforementioned who openly share their experience for the betterment of all manufacturers.

We are extremely grateful for their contributions!

"*The Manufacturers Alliance inspires a growth mindset, bringing optimism and solutions. Individuals get aligned for a common corporate mission of excellence. Peer-to-peer learning experiences foster a faster journey, and members build confidence, perseverance and seek out new challenges that ultimately make them even stronger!"*

Steve Hanson
Co-CEO and Owner

Glossary

Lean - According to Sneen	
Continuous Improvement terms you need to know, in brief	
Terms	**Definition**
8 Forms of Waste:	Defects / Rework Overproduction/Over processing Waiting Not Utilizing People's Talent Transportation Inventory Motion Excessive Processing + 9th: Environmental or Energy Also see **Waste**
A3	The size of one sheet of paper used to concisely report problem solutions (often using the PDCA method), which are then available for posting.
Andon	A light on a specific machine or work station that calls attention to defects or equipment problems. The three-color light has a red section for failure mode, a yellow light to show marginal performance, and a green light for normal operation. Also see **visual control.**
Balanced Scorecard	A key measurement system that relates strategy to actions with specific weighting factors in areas such as: customer service, financials, business processes, productivity, and training or new products.
Benchmark	A performance measure of a company, considered a worthy model or best in class, used for comparison among companies. Also see **best practices.**
Best Practices	Methods worth emulating that improve the workplace and can be copied by other areas or companies.
Bill of Materials (BOM)	A hierarchical list of all the parts, and raw materials that go into a parent assembly, and or sub assembly.
Black Belt	Someone who has passed an advanced level of training in six-sigma methods such as measurement, statistical analysis, process improvement and control.
Bottleneck (or constraint)	The place in production that creates delays or constraints that limit output in the total throughput.

Buffer stock (or buffer inventory or just-in-case)	Extra goods in production used to minimize shortages due to *variations* in supply or demand.
Cell	A self-contained group of machinery, equipment, tooling, and workers arranged in close proximity to complete a production process. Also called a **work cell.**
Change Agent	A natural leader who acts as a catalyst for organizational change.
Changeover Time (Setup time)	The time between the last good piece off one production run and the first good piece off the next run.
Constraint (or bottleneck)	An operation, in the plant or office, that cannot keep up with the other operations in the process. They may be physical, logistical, managerial, or behavioral. Also see **bottleneck** and **theory of constraints.**
Control Chart	A graph that plots data over time to determine if a process is statistical under control, i.e. within specified limits.
CpK	A statistical metric used to measure *process capability* by comparing a variable's tolerance band (in the numerator) to the *actual* spread of the data distribution (in the denominator).
Cross-functional team	A team composed of representatives from several functional departments.
Cycle time	The time that it takes to complete *one operation.* For example: the total time of an operation, including loading, unloading, inspecting, etc.
DMAIC	Define, measure, analyze, improve and control. The problem-solving approach associated with six sigma methodology. Also see **Six Sigma.**
Dashboard	A group of key performance charts in one area analogous to a control panel of a car.
Demand Flow	Production amounts determined by upstream or customer demand rather than to a predetermined schedule. See **pull production**.
Design for Manufacture (DFM)	Design with the intent to make manufacturing more efficient. The result may be fewer parts and fasteners, mistake-proof assembly, easier inspection, improved quality or eliminating unrealistically tight tolerances. Similar to **Design for Assembly (DFA) and Design For Manufacture and Assembly (DFMA).**
Design For Six Sigma (DFSS)	An approach with the objective of identifying and quantifying the expressed needs of customers and the business as part of the product development process.
Failure Mode and Effects Analysis (FMEA):	The systematic analysis of a product in design to predict and prevent causes or risks of potential failures or mistakes.
Fish-bone diagram	A cause-and-effect diagram that resembles the bones of a fish. The problem or effect is on one side (the head) while the possible causes are listed under major categories on each diagonal line (the bones). Also known as an **Ishikawa diagram**.
Five S (5S)	A process to organize and standardize the workplace summarized by five Japanese words beginning with S: Sort, Set in place, Shine,

	Standardize and Sustain. Steps include: discarding unneeded tools and equipment, arranging the remainder in order and labeling them, cleaning and inspecting them, making this better organization the norm, and auditing it ongoing.
Five Whys	The practice of asking "why" five times to get to the root cause of a problem. Also known as Root Cause Analysis.
Flow Chart (or process diagram)	A step-by-step, pictorial representation of how information or products move in a process. Some versions use standard symbols connected by lines for activities, delays, inspections and storage operations.
Focused Factory	A plant-within-a-plant. They organize the facility, its management, and its support services according to the market segment, or set of customers, or common processes instead of by functional departments.
Gemba	A Japanese term meaning the plant floor where the work gets done. Problem-solvers must go there to observe and understand the full impact of the manufacturing problem.
Green Belt	Trained, middle-level Six Sigma practitioners. They are problem-solving team members who support the lead of Black Belts using fact and data-based decision making.
Heijunka	A Japanese system of production scheduling to achieve an even flow of production using a visual scheduling board.
Hoshin Kanri Planning	A Japanese term for simple, visual strategic planning objectives (x-matrix) and implementation using Plan, Do, Check, Act (PDCA) principles to set goals, metrics and progress milestones. Also see **Policy Deployment.**
Just-In-Time (JIT)	A method of delivering the right amount and kind of product to the right place just when needed – with little or no buffer inventory. Similar to **pull production**.
Kaizen	The Japanese word referring to continual improvement activities involving the workforce. It is also associated with rapid improvement processes known as **kaizen blitzes** – often one week long, rapid improvement team events.
Kanban	A Japanese word for a visual "signal" that triggers a replenishment order (instead of a computer-generated work order or purchase order). Usually based on demand versus forecast, and a standardized, repeating quantity. There are many varieties that may involve traveling cards, squares marked on floors or tables, or barcode-triggered emails or faxes that move or replenish parts or materials in-house or from suppliers.
Key Performance Indicator (KPI)	An important management measurement indicating the progress toward a goal.
Kaizen Promotion Office (KPO)	The internal organization or team which drives and supports kaizen efforts, training and lean improvement activities within the company.

Lead Time	The time a customer waits for an order (from initial placement through delivery). Similar to **throughput time.**
Leaders Standard Work (LSW)	Concise documentation of the routine portions of a leaders repetitive work for the purpose of improving accountability. Also see **standard work.**
Lean	Often refers to an efficient manufacturing system, like the best known, Toyota Production System. Now, it is also used as an adjective to many improvement techniques that eliminate waste, reduce cost and add value.
Lean Accounting	Can replace traditional managerial accounting and performance measurement systems with costs, controls and metrics that motivate, support and realistically measure lean initiative outcomes.
Lean Enterprise	A company that has expanded the application of lean process improvement beyond production to all other areas.
Line Balancing	The process of leveling the workload among all workers on an assembly line or value stream process.
Manufacturers Alliance (MA)	A Minnesota-based manufacturing association that shares manufacturers' experiences, education, training and resources peer-to-peer. Contact at 763-533-8239, www.mfrall.com or ma@mfrall.com
Material Requirements Planning (MRP)	A computerized system that looks at a forecast, master schedule, bills of material, routings, and inventory levels to generate production and purchase orders in the required quantities and timing. Similar to **manufacturing resource planning (MRP II).**
Mistake-Proofing	A preventive technique or device that prevents an incorrect operation. For example, parts that can assemble only one way, electronic order forms that have limited correct choices and required fields, and vision inspect systems that prevent further processing. Similar to **poka-yoke.**
Muda	A Japanese term for waste. Also see **waste.**
Non-value-added	Any activity on a product or service that does not add value for the customer. For example, multiple inspection operations do not add value if they could have been prevented through mistake-proofing.
One-piece flow	A lot size of one piece (as opposed to a batch of many) for the purpose of continuous flow and minimizing delays and inventory queues.
Overall Equipment Effectiveness (OEE)	A metric for evaluating equipment performance and value. OEE = availability *x* performance *x* quality rate *x* 100.
Paradigm	A perception, old habit, or assumption that biases our thinking and prevents us from considering new ideas properly.
Pareto Chart	A bar graph based on the 80-20 rule, where the about 80% of the problems stem from the top 20% of the causes.
Plan-Do-Check-Act cycle (PDCA)	Part of an improvement process cycle that plans, does, checks results, corrects and starts over.

Plan For Every Part (PFEP)	A door-to-door lean material handling system for purchased parts that includes a very detailed spreadsheet for every part, a purchased-parts kanban market, and a standard delivery route triggered by pull signals.
Point of Use	Visibly storing tools, supplies and/or parts very close to where they are used thereby saving movement and time.
Poka-Yoke	A Japanese term that means mistake-proofing, i.e., techniques and equipment that prevent errors. See **mistake-proofing.**
Policy Deployment	A simple strategic planning method of cascading goals and accountability. Often associated with a X matrix that describes the what, how, how much, who and when of the basic deployment plan. Also see **Hoshin Planning.**
Predictive Maintenance	Use of historical measurement data from sophisticated infrared, ultrasonic, vibration or oil analysis to anticipate failure and service it before it occurs catastrophically.
Production Preparation Process (3P)	A process of rapid creation and testing of potential product and process designs that require the least time, material, and capital resources. Similar to a Kaizen team approach to identify several alternative ways to meet the customer's needs using different product or process designs. Often uses homemade, right-sized equipment to better meet production needs. Also see **design for manufacturability**
Pull Production	A production system in which actual need or demand by each department determines the quantity to produce versus a forecasted schedule (see MRP and push production). Most applicable for repetitive demand and short lead times. It is responsive to changes in product mix and simple, visual, kanban controls. See **push production.**
Push Production	A production system based on forecasted sales or demand and economic order quantities. This system is usually more suited for low volume, variable demand, long lead times and computer-integrated systems. See **pull production.**
Quality Function Deployment (QFD):	A process to quantify customer expectations into product requirements. Uses a tool called the *house of quality matrix* to weigh key trade-offs among customer expectations and competitive offerings to help generate quality, design and production specifications. Also see **voice of the customer.**
Queue Time (or wait or staging time)	The time a product spends waiting to be worked on.
Red Tag	The initial step in the 5S sorting process where red tags are used to identify items that are not likely to be used. If they are not used within a specified time period, they are disposed of, thereby increasing space and organization.

Six Sigma	A statistical term referring to 3.4 defects per million. In the broader sense, it refers to data-derived problem-solving tools and methods to improve performance and decrease process variation toward zero defects. Also, refers to a training process for black and green belt level practitioners. Also see **DMAIC.**
Single-Minute Exchange of Dies (SMED)	Techniques used to reduce changeover time on machine setups. The theoretical goal is under 10 minutes. Also see **change-over time.**
Standard Operating Procedures (SOP)	Standardized procedures, policies and accepted methods of operating.
Spaghetti Diagram	A line chart of the path that products take through the production process (that often resumes a plate of spaghetti) and illustrates the opportunities to reduce travel time.
Statistical Process Control (SPC)	Charting techniques to plot dimensional and other data for quality control purposes. Mathematical calculations determine if the data is varying within normal expectations or outside of specified limits.
Standard Work	Procedures which describe the best way to perform required work consistently. They minimize variation and waste.
Storyboard	Large, visual or pictorial communications of important information and key points.
Supermarket	A self-service store of parts replenished by kanban signals.
Takt Time	The calculated pace of production required to meet customer demand.
Theory Of Constraints (TOC)	Bottlenecks in production control the total output - like the neck of an hour-glass. Focusing on controlling, buffering and scheduling the bottlenecks will have more impact on output and inventory than efforts spent in other areas.
Value	Anything that someone is willing to give up or trade resources (i.e., pay) for. Similar to **value-added.** Also see **non-value-added.**
Value Stream Mapping (VSM)	Pictorial charting all the steps as your product and information flows through the entire process or value stream to the customer. It illustrates non-value added activities and then portrays the improved future vision of the way things could be.
Visual Control	Visual clues at a glance of what and how things are performing for everyone to see and keep informed. Also, the placement in plain view of tools, parts, kanbans, instructions, and quality indicators that help control the system (as opposed to computer reports for management).
Visual Management	The process of making a workplace more effective by communicating the current condition visually at a glance.
Voice Of the Customer (VOC)	Processes for interpreting, quantifying and prioritizing customer expectations and requirements – often involving marketing, engineering, quality, customer service inputs. Also see **quality functional deployment.**

Waste	Anything that consumes resources but does not return value to the customer. Also see **8 Forms of Waste.** Similar to **muda:** A Japanese term for waste.
Work In Process (WIP)	Products being worked on where labor has been added to the material to increase its value prior to sale. The lean goal is to minimize WIP inventory.

Acknowledgements

This book would not have been possible without many contributions from the passionate and loyal members of our Manufacturers Alliance association (www.mfrall.com).

Contributions came from:

- The bold writers, many of whom have taught courses for us
- The enthusiastic reviewers who gave candid testimonials,
- The volunteer editors, especially (professor) Jim Drennen, who dedicated their time and expertise
- The Manufacturers Alliance staff who offered advice and support