THELEANMAG

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lean | kaizen | operational excellence | continuous improvement | strategy | leadership

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PREPARE EXECUTE OVERCOME & SUSTAIN

YOUR BUSINESS' TRANSFORMATION

Editor's (quick) note:

a) springtime and heading to summer!

b) we're all (or close to that) out of the COVID restrictions' prison now.

The mood is good!

I'm sure your "business mood" will be better after you read these very insightful articles, most of them directly related to business transformation and also touching the people's side of the system.

You will find out what to consider during that transformation, what to expect, some challenges, what's next, and some real-life experiences.

Enjoy your reading.

Pedro Monteiro

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THE HUMAN SIDE OF VALUE STREAM THINKING

*by **Karen Martin**, President of TKMG, Inc., Founder and President of TKMG Academy, Inc., and author of five business performance improvement books, three of them award-winning.*

When you think of value stream transformation, what are the most common desired outcomes that come to mind? Shorter lead times? Higher quality? Reduced expenses?

Expansive thinkers often go beyond these classic performance indicators and aim for improvements such as shorter-to-market lead time for new products, greater market share, smoother acquisitions, and less painful annual budgeting cycles.

These are all noble pursuits that can be accomplished more easily through the proven practice of **value stream mapping**. However, in our experience, the deepest transformational benefits from well-executed value stream mapping activities are often people-based.

You see, improvement and organizational transformation are deeply psychological. Looking exclusively for tangible results ignores the reality that people are psychological beings. Being aware of and playing into human psychology can be tremendously healing—for both the individuals involved and the organization-at-large.

There are three core conditions that well-executed value stream improvement cycles foster that are wickedly effective in achieving quantifiable performance improvement. They are also humanistic at their core.

LEADERSHIP ALIGNMENT

The word "alignment" has been bandied about so much that it has achieved buzzword status. Buzzword or not, leadership alignment is a linguistically accurate aim—and critical for achieving outstanding performance. And it's often missing.

During our initial work with client leadership teams, they'll often declare, "Of course we're aligned!" But when we listen to the conversations, observe body language, and learn how an organization solves problems, we often see moderate to high degrees of leadership misalignment over issues that are fundamental to an organization's success. In the most egregious cases, the misalignment leads to high degrees of dysfunction.

Appearing to play well in the sandbox with one's peers is not a valid indicator of what's going on psychologically. And, what's going on psychologically in every leader's head is directly tied to how well the organization will perform.

- Alignment is NOT present when one leader believes the organization should offer a new service or move into a new geographic area, while another believes the organization should focus on fundamentals.
- Alignment is NOT present when one leader believes that a certain type of work belongs in his/her part of the organization and another leader believes it belongs elsewhere.
- Alignment is NOT present when one leader believes that one part of the organization is under-performing, while another leader doesn't see it.

Value stream mapping helps a leadership team align around organizational purpose, strategic direction, annual business goals, and improvement priorities. It provides a powerful forum for leaders to gain clarity, focus, consensus, and commitment.

Done well, value stream mapping shines a light into cobwebbed corners of an organization and allows them to be cleared. It surfaces the truth—unequivocally and unapologetically. It reveals the cracks in a company's operation, the financial model it uses, how it sells its goods or services, and how it treats its suppliers, customers, and employees. It uses facts to challenge leadership biases and misperceptions.

But it also creates a safe haven for the crucial conversations that need to occur so that the organization can heal itself and accelerate its journey to excellence.

With a newfound understanding of current reality, leadership teams typically come together in profound ways. (It also surfaces very clearly when a leader will remain misaligned and needs to find a new home!) With a shared commitment for the future state and the improvement priorities needed to get there, they morph into a cohesive, collaborative whole that spreads to the frontlines and fuels the transformation process.

EASIER WORK

The second outcome that speaks to the human side of value stream mapping is around the work itself. Respect for people is a core tenet of Lean management and goes far beyond how one is treated in meetings, in hallways, and in the cafeteria. In fact, the greatest measure of how much respect for people is present in an organization is the degree to which team members can succeed in doing their work and fully utilize their knowledge, skills, aptitude for learning, and creative potential (KSAC).

Unfortunately, in many organizations, people are forced to work with kludgy work systems and processes that make it impossible to be successful, no matter how well-intended and highly skilled one is.

To make matters worse, people are often blamed for problems instead of first looking at the systems and processes that created the environment for the problems to occur. Gathering a leadership team together to understand the current state of how value flows—or doesn't flow—to customers creates a powerful venue for seeing how difficult it can be for staff to be successful. After the current state discovery process, many leaders

> “*Instead of accepting work systems that drive people apart, we need to design work systems that bring people together.*”

have admitted that they were embarrassed by what they learned. But while developing a deep understanding of the current state can be sobering, it provides the leadership insight needed to launch true organizational transformation.

The process of streamlining workflows, closing gaps, correcting disconnects, and reducing redundancy and rework provides a more humanistic and respectful work environment for the people who deliver customer value, which brings me to the third and final outcome.

CUSTOMER VALUE

The need for "humanistic workplaces" has been mentioned more and more in business literature. And millions of workers around the globe would agree. What's not being talked about as much—and needs to be—is the need for creating "humanistic customer experiences."

Value stream analysis and design has always centered on "providing value to customers." This is an apt description of the essence of why businesses exist. However, while the original mainstream definition of value—are they willing to pay for it?—is still a relevant question, it's an overly simplistic definition of value.

All too often the customer experience is filled with frustration, unmet expectations, painful degrees of effort to fix something that shouldn't have been a problem to begin with—and, in the worst cases, injury or death. These are untenable outcomes—***especially*** if providing value centers on solving customer problems, not causing additional ones.

The human side of providing value places an obsessive emphasis on creating an effort-free experience—and one that builds relationships and connections between people versus one that results in frustrated customers yelling at customer service reps. Should customers be better at controlling their frustrations? Perhaps. But shouldn't we work on root cause here? Shouldn't we design work systems ***that actually work*** and eliminate the chance of frustration to even emerge?

Done well, value stream thinking, does exactly that. Humanistic future state designs place heavy emphasis on eliminating anything that causes the customer to feel anything but joy and appreciation for the wonderful product or service they received. This is true both during the process of buying a product or consuming a service—and as the post-sale experience. Instead of improving processes for processing warranty requests or handling customer complaints, we need to ***prevent the need for these processes.***

Instead of accepting work systems that drive people apart, we need to design work systems that bring people together. Customer joy and ease should be the norm instead of the exception. This is what customer value is all about. Bringing humanity to goods and services—and humanity to the process for accessing them.

SUMMARY

Value stream mapping is far more than a tool to achieve quantifiable business performance improvement. It's a ***repetitive management practice*** that helps build an appetite for surfacing the truth, solving problems, resolving complacency, and designing a better tomorrow. When well-designed future states become reality, organizations can finally realize their full potential.

Done well, value stream thinking deepens understanding, heals relationships, and brings a human side to business.

HOW MUCH TIME DOES IT TAKE TO COMPLETE A LEAN TRANSFORMATION?

*by **Art Byrne**,*
is the retired CEO of The Wiremold Company where his lean strategy increased enterprise value 2,467%. He is also the best selling author of The Lean Turnaround and The Lean Turnaround Action Guide.

Ah, so before you get started your first question is *"when will we be done?"* Seriously, that's how you think? If it is then my advice is don't even start. You obviously don't understand what the term "lean" means so all you will do is cause a lot of confusion and wasted effort and eventually you will fail. Now if I said "lean" is another way to say "continuous improvement" would your first question still be, "when will we be done?" After all "continuous improvement" does mean continuous so by definition once you start down the lean path you will never be done. Just look at Toyota who got all this started in the first place right after World War II and they are still driving the Toyota Production System [i.e. lean] just as hard as ever.

On the other hand, once you accept the reality that you will never "be done" we can start to talk about what needs to be done and I can give you some ideas of what you can expect from a timing point of view. Understand of course that because companies are very different in their physical and organizational structures that this will effect the rate at which you can make progress. Manufacturing companies have different issues and obstacles than service companies. Size also comes into play as converting a $50 million business will take less time than a $10 billion business. Some people might even argue that private companies can go faster than public companies although I don't really buy that argument.

I think the biggest factor of how long it takes to convert to lean really depends on the will and push of the owner or CEO. The enormity of what it takes to change from a traditional batch approach to a lean flow and pull approach tends to scare the heck out of CEOs. "What if this doesn't work?" "What do you mean EVERYTHING has to change?" "Move every machine in the shop, are you nuts?" "Sell one make one, we can't possibly do that." So as a result most CEOs choose a cautious go slow approach. Lets try it out and see if it works. They also focus primarily on operations and think of lean mostly as a cost reduction effort. This doesn't mean they can't make gains or that they eventually couldn't become a reasonable lean enterprise.

Its just that it will take a long time and because of this most companies will fail along the way and revert to their batch and que ways.

So lets not waste time on the "go slow" boys. Lets assume we have a CEO or owner who is very keen on converting to lean and wants to do it as fast as possible because she/he is convinced that this will allow the company to deliver the most value to its customers. With that as a given the first thing to understand is that what we are trying to do is to go from batch and push scheduling to flow and pull scheduling. That may sound simple until you consider all the obstacles in the way of doing it. So the best way to think about the timing of a lean conversion is look at it obstacle by obstacle and give a time frame for each one.

> *I think the biggest factor of how long it takes to convert to lean really depends on the will and push of the owner or CEO.*

INVENTORY IS THE ROOT OF ALL EVIL

Moving to lean puts a premium on removing the waste from all of your existing operations in order to deliver more value to your customers. As inventory is the number one waste as defined by Taiichi Ohno, the father of the Toyota Production System we should start there. I always tell people that if you had to run your company using only two measurements they should be 1] on time customer service and 2] inventory turns. If both of these measurements are going up at the same time you are on the right track. Improving inventory turns frees up cash and floor space, shortens lead time, improves safety, increases productivity and improves quality. I believe that a manufacturing company that starts with 3x inventory turns should set an initial goal of 20x. I know this sounds nuts to most of you but I have done it many times so I know a] it is possible and b] how great the side benefits are from doing this. What is relevant here however is the question of time. How long will this take? Well that depends on how aggressive you are but of course you can't do this by next Thursday. In fact if you go too fast you will blow the company up. My experience would suggest a progression like this; Year one from 3x to 6x. Year two from 6x to 8x. Year three from 8x to 10x. Year four from 10x to 12x. After that a gain of one to 1.5 turns per year would be a good doable pace. That will get you close to 20x in about 10 years.

SET UP REDUCTION

One of the main reasons traditional companies produce in big batches is due to the long set up times of all their equipment. For example if it takes three hours to change over a machine changing it three times per week means you loose a whole day of production if you are only working one shift. As long as set up times remain long you can not get to a flow operation so this is one of the first things you will have to attack. The good news is that there is plenty of opportunity here without much if any capital spending. I have given plenty of set up reduction examples in my prior posts [a rolling mill from 14 hours to 6 minutes] the real issue is one of commitment and of course time. Your machines are busy every day producing product so how do you free up the time to reduce their set up times. If you can cut the set up time of two machines a month by over 70% how long will it take you to reduce all your set up times the first time around? Once you calculate that then figure you have to go back several more times as you only reduced the set up by 70% the first time and you need to get all set up times under 10 minutes. It will depend on how many machines you have but you can do the math.

ONE PIECE FLOW

To become lean you need to stop producing in batches and produce in a one piece flow. Up front this means changing from a functional organizational structure to a value stream structure. Coming up with the new organization and its related staffing won't take that much time, say a couple of months, but once you have it you now need to move all your machines such that each value stream manager has all the equipment needed to build their product complete from raw material to in the box. You may leave a few "monument" machines in place but everything else will have to move, and probably more than once as you discover more waste. Depending on the size and complexity of your operations you can expect to see lots of moves over the first five years and probably longer.

PULL

Once you have reduced all your set up times and rearranged everything into a one piece flow now you need to create a kanban system in order to have the pull signals in place to initiate production. You can do some of this as you go along and create each new production cell, at least for internal parts and even with a few external suppliers. So some work can be done in parallel. But setting up an overall kanban system that responds to the hour by hour orders from customers and extends all the way to raw material suppliers is a bit tricky. You can assume that this will take a couple of years of concentrated effort AFTER flow has been established.

EVERTHING ELSE

While all of the above is taking place you need to be addressing a number of other critical changes. You have to get off of standard cost accounting and switch to lean accounting. Your sales terms might have to change to help level out incoming demand and sales and marketing have to stop pushing big batch sales or doing big end of month promotions to "make-the-month." Product development needs to change to a QFD [quality function deployment] approach. IT systems must change as you can no longer schedule production using MRP. The good news here is that these steps can be taken in parallel to the more physical changes above. They will add some time depending on how you go about it but it shouldn't delay you by more than a year or two.

BOTTOM LINE

The time to convert to lean will obviously vary by company even if every company takes an aggressive approach. As a rule of thumb based on my experience you should plan on at least 10-12 years to reach a reasonable level of competency. You won't be a great lean company by then and you certainly will not be Toyota but you should have achieved a level where 1] you will never go back and 2] the opportunities going forward will be even clearer than when you started out. Getting to or close to 20x inventory turns will be a key indicator that you are making progress. Oh and by the way, you should have more than doubled in size, increased margins by 10x to 12x, gained a lot of market share, drastically improved quality and maybe increased your enterprise value by the nearly 2,500% that we did at Wiremold in just under 10 years. More importantly you will understand that the next 10 years should be even better.

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THE KEY TO EFFECTIVE PROBLEM SOLVING? IT'S IN THE "STUDY"

by ***Katie Anderson***, *internationally recognized leadership and learning coach, lean practitioner, speaker, and bestselling author of Learning to Lead, Leading to Learn.*

"Reflection is the beginning, not the end, of learning."

Do you ever find yourself in the ongoing cycle of planning and execution? If so, you aren't alone.

Many get stuck on this endless hamster wheel that is intended to drive results, encourage productivity, and help individuals and organizations accomplish goals … and yet, this cycle is exhausting and, needless to say, doesn't position your team or organization for the most important learning to happen.

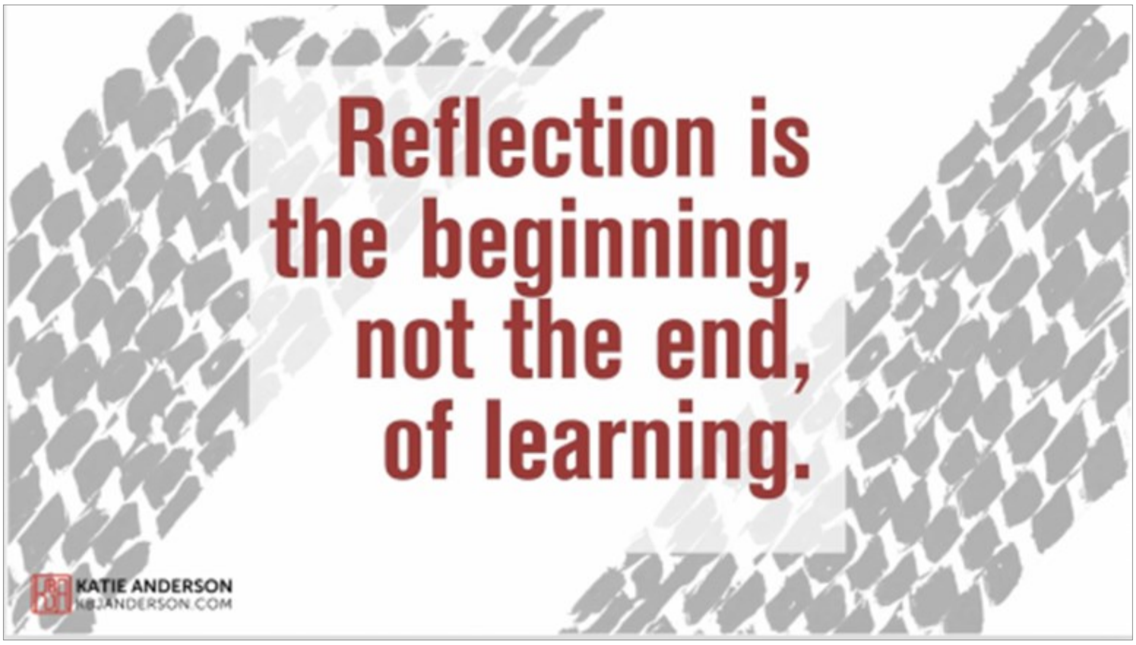
Learning is the breeding ground for innovation, collaboration, and transformation. And while some may champion the belief that learning can happen between execution (or doing) and planning for the next thing to accomplish, I believe that real learning requires an intentional pause … something many of us tend to make little, if any, time for.

How often do you, your team or your organization set aside time — *intentionally* — to check? To reflect? To study? To learn from the progress you've made and the opportunities you've seen as you navigate toward accomplishing your goals or strategic initiatives?

If you're like many leaders, the answer is probably too few times to even spend counting.

The good news is that, no matter your approach to problem-solving and goal achievement until this point, embracing being intentional in all that you do as a leader — including intentionally pausing for meaningful reflection prior to moving on to the next action — is something you can start today. Right now. This very moment.

An intentional pause just may be the key differentiator between your team continuing to take action because it's the next step in your usual approach, and beginning to pause to study … adjust, and then take action … possibly even new action … because it's the next *right* step.



A Systemic Approach to Learning

The scientific method — also known as Plan-Do-Check-Act (PDCA) or Plan-Do-Study-Adjust (PDSA) — is a systemic approach many organizations and leaders around the world use for projects and management. It's the foundation of the continuous improvement problem-solving approach that I've incorporated into my own work and have taught to thousands of leaders over the past two decades. And it's one that I had the opportunity to appreciate more deeply while living in Japan and learning firsthand from 40-year Toyota Leader Isao Yoshino, the subject of my book *Learning to Lead, Leading to Learn: Lessons from Toyota Leader Isao Yoshino on a Lifetime of Continuous Learning.*

As I highlight in *Learning to Lead, Leading to Learn*, the PDCA cycle became the foundation of Toyota's approach to kaizen (continuous improvement) and problem-solving:

"*In the 1950s, Dr. W. Edwards Deming, an American scholar and operations management consultant … visited Japan four times to introduce Quality Control concepts to people in Japanese industry. From June to August 1950, Deming trained hundreds of engineers, senior managers, and scholars across Japan on concepts of quality, including the Plan-Do-Check-Adjust (PDCA) cycle*."

A decade later, in the 1960s, Japan developed *hoshin kanri*, a strategic planning and checking process. In English, "hoshin kanri" has often been translated as strategy deployment and is the plan that sets the direction for the organization's true north. The process of regular checking and adjusting plans throughout the year is like a compass to keep teams and organizations focused, strategic, and intentional.

This method is powerful. It works. It incorporates a meaningful, and an intentional, pause to check, to study, to reflect, and to make adjustments.

As Mr. Yoshino shares in *Learning to Lead, Leading to Learn*, the checking and adjusting parts of the cycle are the most critical for learning:

"*The check process of PDCA is considered to be the most important part of the concept. Checking helps us to learn many important things from reviewing the result and its process.*"

Yet, in my observation of most applications of the PDCA model, these two steps are most often missing. The cycle isn't fully utilized … and learning is missed.

The key to creating an organization that fosters innovation could possibly be a subtle switch; one that encourages reflection at the beginning, not at the end.

Let's discuss the problems with traditional problem-solving approaches

First, it's human nature to assume that you know the problem you are trying to solve. In actuality, jumping to conclusions could inadvertently cause you to miss the core problem altogether. You need to study the current conditions to really define the actual problem at hand.

Secondly, you assume that you know what the solution is or what it should be. But how is that even possible when you don't have clarity on what the problem is in the first place? Or better yet, you haven't defined what causes the problem!

If you think you know the problem and the solution, then you are quick to jump to implementation – to Plan-Do – Immediately. That intentional pause is likely brief … a formality … but isn't truly considered. Or maybe it doesn't even happen. And why would it be? You already know what you need to do, so you make it happen. Right?

This mentality encourages you to dive right into "plan" and "do" first on the cycle. And, after the "do" is accomplished, over time you likely skip the "check" or "study" step. And, if you didn't quite reach the target, go straight into the next plan-do steps, without really understanding the process you took that led to the current result.

It's like throwing darts hoping each time that you will hit the bullseye, without understanding if you are on course or off course, and what adjustments you might need to take to get to the target. You end up looking just at the outcome and keep taking action, without understanding the process to get there.

Having worked internationally with leaders and organizations from various industries of all sizes, I constantly see this as commonality among many. Rest assured, you are not alone!

Don't get stuck in the Plan-Do-Plan-Do cycle (or just Do-Do-Do…)

Besides being exhausting, it's just not fully effective. Real learning happens when intentional reflection is not just accounted for … but planned for … and it is needed to navigate progress, overcome obstacles, and create teams that leverage their chain of learning for individual and organizational growth.

While an outcome is a goal, continuing to throw darts at a target isn't going to help identify if you are on course or off of it altogether. The process is critical. And taking time to "check" the process shouldn't be seen as merely "checking a box" activity, but rather it should be seen as an opportunity for learning.

What some may see in the beginning as "checking" for missteps, mistakes, or opportunities to highlight what's wrong will likely evolve into ongoing opportunities to take risks and learn from them as well as develop a culture where learning can happen … and should happen … in real time and in real ways. And, in doing so, new opportunities arise, new solutions unfold, and innovation is readily available.

How can we "check" to learn?

It's not as hard as it may seem.

First, it starts with seeing "checking" not as a "check the box" activity, but a process for learning and reflection. In fact, as I describe in the Learning to Lead, Leading to Learn Workbook, "*In the 1980s Deming modified the cycle to include "Study" instead of "Check" to emphasize the importance of reflection. For this reason, I prefer using PDSA — or even better, SAPD, to emphasize that the cycle starts with learning.*"

And second it starts with pivoting the cycle to begin at a different starting point. Try starting NOT with "Plan-Do" but instead with "Study-Adjust."

Let's shift to "Study-Adjust-Plan-Do" as our starting place: SAPD!

Some may argue where you start the acronym doesn't matter as the cycle is continuous … and that planning should include understanding the current state. Yes, the cycle is continuous and planning should include understanding the current situation before jumping right into planning and doing.

However, in my experience, it doesn't. We remain stuck in Plan-Do -Plan-Do.

A subtle shift in where you begin — SAPD — is a powerful shift in mindset and actions.

The very nature of starting the cycle with "Plan-Do" can encourage the "Plan-Do" broken record. Embracing "Study" and reflection as the beginning sets the stage for the development of a learning culture. And that's a culture where individuals and teams feel empowered.

Let's put the SAPD cycle in action.

I've been afforded the opportunity to see the SAPD cycle in action – and to put it into practice. This cycle of learning is what I advocate as one of the fundamental patterns of thinking and action to accelerate learning and impact.

SAPD - Study - Adjust - Plan - Do …and repeat!

Start everything with reflection. If you do, you will uncover learning that informs meaningful adjustment. This is where continuous improvement accelerates.

Study what is happening. Understand the real problem needed to be solved.

Determine the adjustments needed to be made. And then put the plan in place. See it as an experiment for learning. Execute … do … and continue the learning process.

This is the foundation of effective problem solving.

Problem solving is about recognizing that there are problems in the first place, welcoming "bad news" as opportunities for innovation and change, and leading with a "no problem is a problem mindset."

Problem solving is about understanding the real problem — not just the messy problematic condition you are experiencing. It's about thinking deeply and helping others do the same.

And it's about coming up with possibilities and helping others tap into their creativity and come up with ideas to solve problems.

And, of course, it's also about testing and leveraging the Study-Adjust-Plan-Do (SAPD) cycle and reflecting, learning, and adjusting along the way.

Accelerate Your Learning Today by Starting With Studying

Ready to give the SAPD process a try? Here are a few questions to reflect on as you do.

Take a moment to study your current situation with the intentions to understand and define:

- What is happening now?
- What does "better" look like?
- What should be happening?
- What are some of the problems or the possible causes of the problem?

Only after this deep reflection can you (and should you) create a plan and test it out by doing. As you do, ask yourself:

- What do you expect to happen?
- When are you going to try the new idea — and take action?

Then do. From your actions as an experiment. A hypothesis.

And, once again, take the opportunity to "study." Ask yourself:

- What was the difference between what you expected to happen and what actually happened?

And then what adjustments do you need to make to move towards your target or goal?

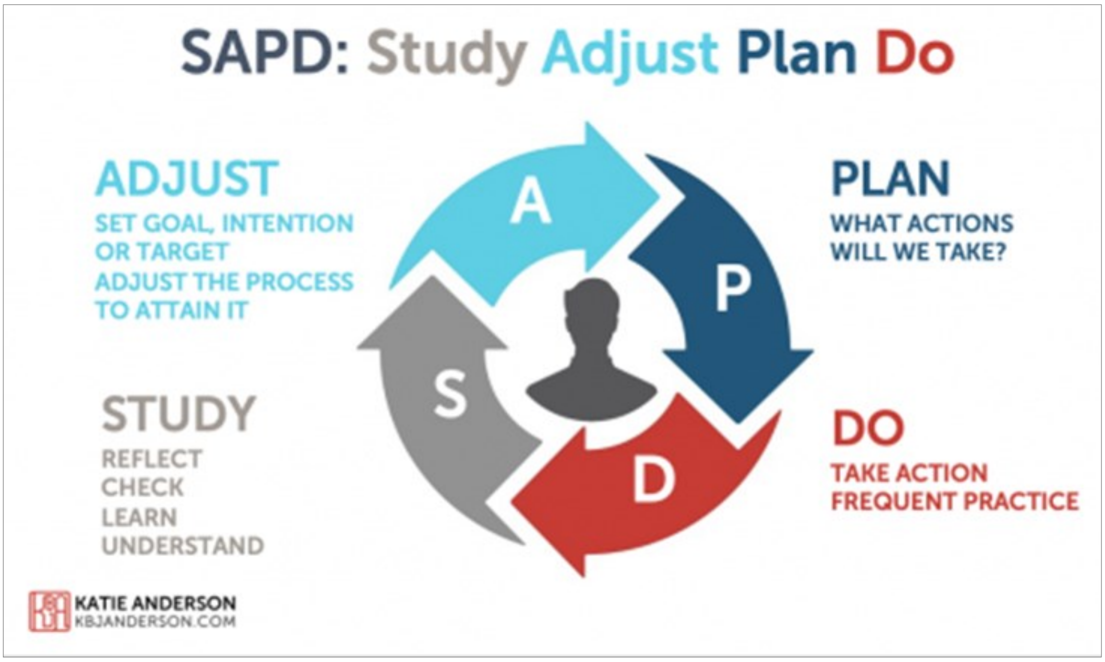
A Word of Caution: Don't ONLY study

Studying without action won't move you forward. Don't get stuck in analysis paralysis or inaction because you don't have the perfect target or know the perfect next step. As Mr. Yoshino once told me:

"A practical style is more important than precision when setting targets. Precision doesn't matter in the beginning — you need the direction to go, and then you can learn and improve it. Spending weeks and weeks of doing nothing is worse." - Isao Yoshino in *Learning to Lead, Leading to Learn.*

Forward momentum – with learning – is the name of the game.

Everyone is better at solving actual problems when the starting point isn't with a solution in mind, but rather a process gap to be closed. Many times, your ideas may actually be the needed solution (and it's great to be creative and generate many possible ideas that you can try), but you first need to test them out, and study if they had the impact you anticipated, before you know they are the actual solution.



Do-Do-Do or Plan-Plan-Plan without the "study" and "adjust" parts of the cycle are just as ineffective.

In fact, any one component of the cycle is not effective independently. It needs the other critical pieces of the method. Without it, the solution might not eventually be discovered. The actual problem might not really be solved.

It's important to run experiments to learn more and to be intentional that "plan" and "do" is to learn more about your current condition and your problem. The best hamster wheel to be on is the SAPD-SAPD-SAPD one, where real learning is happening over and over.

As I wrote in [Learning to Lead, Leading to Learn](): "*learning is never perfect, and it is never complete*."

And that "*reflection — through studying — is the beginning of learning, not the end, of learning.*"

If you find yourself starting with planning — or with a solution in mind — before understanding what problem you are trying to solve, I encourage you to ask yourself the following questions:

- For this idea of a solution — the action I want to take or thing I want to implement — what would improve if I took these steps? What would be improved if I did this idea or implemented this solution?

Reframing your "solution" in this way helps inspire time for reflection and study, allowing you the chance to actually understand the problem you are really trying to solve, instead of jumping forward with urgency to take action.

SAPD: Start with reflection!

When in doubt, choose reflection first. Make it a priority. Because reflection is the source of learning, and learning is the catalyst to amplifying your impact (as well as your team's and your organization's)!

Remember, learning is the most important thing, and it is the true secret to success!

Start with Study-Adjust and then Plan-Do. And then keep going!

Join the #SAPD movement and strengthen your chain of learning through reflection today. ■

MY FAVORITE WORD: MOTTAINAI

CHAPTER 13 OF *BANISH SLOPPINESS*

by ***Paul Akers***
is an entrepreneur, business owner, author, speaker, Lean maniac! He is the founder and president of FastCap, a product development company with distribution in over 40 countries, and author of 5 books.

I could regale you with hundreds of stories that elucidate the uniqueness of the Japanese culture. Each of my experiences has slowly and methodically shaped my opinion of what Japan is all about. I believe you would find all these experiences interesting and supportive of my thesis. However, the purpose of this book is not to tell you everything but to whet your appetite and stimulate your curiosity in hopes you might find some benefit to deploy elements of Japanese thinking into your own life. If you should be fortunate enough to travel to Japan and study and learn about this culture, I think your life would be enhanced.

As of the writing of this book, I have trained over 500 people from around the world in Japan. I have crisscrossed Japan in trains, planes, automobiles, and even motorcycles. I have met and worked with some of the top leaders and thinkers. I have lead groups through factories, businesses, and construction sites to demonstrate, illustrate, and contrast what makes the Japanese culture so unique. I have seen people literally in tears and speechless after walking out of Toyota and Lexus facilities, shaking their heads in disbelief, stating that what they saw was impossible. But of all the places and spectacular manufacturing facilities that I've shown to people, nothing has made a bigger or lasting impact than visiting a Japanese elementary school.

This is where we pull back the curtain to understand this amazing culture. It is the children of Japan that grow up to be the leaders that sustain this culture. At school, they are not managing the tardiness or misbehavior of the students. They are not cajoling, prodding, or pleading with the children to behave and learn. They are not disciplining kids because of bullying or an unhealthy obsession with their cell phones. They have a zero bullying policy and cell phones are not allowed. Instead, you see thoughtful, calm, rational adults that are treating children as adults. Every day the children come together to learn, grow, and improve. There is a kata (routine) that happens every day in Japanese schools. There are no janitors, with the exception of those doing specialized work such as cleaning windows in multi-story buildings. Otherwise, the children clean the schools from the toilets, the sinks, the cafeteria, the hallways, the windows, the coat rooms, the playground, to the gardens. In most countries, this would be considered child abuse.

In Japan, this kind of work wells up from the philosophy within this culture, showing deep respect for people and things.

When it's lunchtime, the magic begins. Hundreds of students come into a cafeteria. They are well behaved and sit respectfully as team leaders from every table serve them their lunch. As the food is distributed, not one child eats a single morsel until everyone is served and the prayer of gratefulness is given.

Then a student explains what the food is that they're about to eat and nutrition they will gain from the food. There are no sugary drinks or sugary desserts, there is just healthy vegetables, rice, and fish to eat and milk to drink. Each child eats the food that is given and if there is a chance they will not be able to eat all the food, before they ever touch their plate, they stand up and go over to the food serving area and explain what food they would like removed respectfully from their plate so it is not wasted. Then they proceed back to their table where they eat all the food on their plate. At the end of the meal, everyone works together to clean up the entire cafeteria. What is so remarkable is that there is almost no wasted food. There is no large trash can where they dispose food that has gone uneaten. That would be **mottainai**!

I would like to end this book by discussing my favorite Japanese word, the word that has made the most profound impact on my thinking: **mottainai**. It simply means to have a deep sense of regret when you waste anything. If they leave a grain of rice on the plate, that is **mottainai**. If they leave the water running when they brush their teeth, that is **mottainai**. When children demonstrate a supreme stewardship over the resources that they have been given, even down to a wasted grain of rice, it is extraordinary! Since I have learned this word, **mottainai**, and have seen the deep meaning of it played out in schools across this country, my thinking has forever changed. In everything I do the word **mottainai** rings in my ears. What a pity to waste! Why would I throw in the trash the effort the farmer has spent to provide food. Why would I waste the precious resources of my country? Why would I be so careless with the time and thoughtfulness of another human being on my behalf? This is the **mottainai** thinking and this thinking has changed me forever.

One time I interviewed a nun who was the head administrator at a Christian school in Japan. The fact that there are Christian schools in a culture that is largely Shinto and Buddhist, should give everyone pause. How could this be? Every day the children learn about Christianity, say the Lord's Prayer, and yet they are not Christian.

This is a giant enigma, so difficult to understand, but so Japanese. They are learning about other cultures, languages, and religions and they do it all with smiles on their faces. They're not threatened by the idea of Christianity spreading rapidly across their country. Rather they are elevating themselves in their thinking and understanding as they learn about other cultures. The Christians who are managing these schools are not forcing their religious practices on the children, rather they are respectfully teaching and training them. In any other culture, you would expect tension or an insular attitude toward other cultures and beliefs, but in Japan, it is not the case. As we were walking down the hallways and watching the children happily clean the entire school, I stopped to greet the head nun and ask a few questions. Why did she like Japan? She explained she had lived there for 40 years and was originally from Canada. She told me that Japan is so safe, so peaceful, and a beautiful country. She said, "I like the people very much and they're good people, very good people." When she travels home to Canada periodically and returns back to Japan she always tells people, "I am back".

There is something very special about this country! It all comes down to a single grain of rice. Why would you throw a single grain of rice in the trash? That single grain represents the effort of a single individual who planted the seed, nurtured the seed, irrigated the seed, harvested the seed, and transported rice to villages, schools, and cities across the country. Wrapped up in that single grain of rice is the word **mottainai**. What a pity to waste anything. It is with this single idea that this culture and country has differentiated itself from the rest of the world. It is with this single idea that my life and my company were transformed. Toyota understood that they could not be wasteful and survive. They had to find a way to eliminate the waste from all of their processes. This elimination of waste was not a weekly or monthly process, but a daily process that required total participation from everyone in the organization. We eliminate this waste through the daily kaizen and the fundamental principle that propels us to eliminate this waste is **mottainai**!

Lastly, I am deeply grateful to the Japanese people for all they have taught me. At the core, they are very simple people who have deployed a beautiful and effective philosophy about the way they live.

At the same time, the simplicity of how they live out this beautiful stewardship allows them to deploy sophisticated systems that enhance the lives of millions of people. It is the simplicity of teaching gratitude, with something as basic as the short prayer they say before every meal (Itadakimasu). It is further supported by a **mottainai** mentality.

So come to Japan to see in-depth and in-person this amazing culture. Perhaps you too will be walking down the street and have a satori (sudden enlightenment) moment. For me, the epiphany of banishing sloppiness and falling in love with precision began one of the most important journeys of my life. My hope and prayer is that this book might also begin a journey in your life that creates greater fulfillment and respect for the abundance and blessings we have all been given.

The One Thing: **Mottainai**...what a pity to waste anything

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7 KEY CAPABILITIES FOR A SUPPLY CHAIN LEAN TRANSFORMATION

*by **Euclides Coimbra**, a worldwide thought leader in Continuous Improvement with extensive experience in cultural change and Kaizen Lean transformation. Author of "Kaizen in Logistics and Supply Chains" and "Kaizen: A Strategy for Improvement, Growth and Profitability".*

KAIZEN™ INSTITUTE

In our recent webinar, '7 Key Capabilities for a Supply Chain Lean Transformation', (link) we explore lean transformation in supply chains and the fundamental capabilities. We lay out the process to achieve an end-to-end improvement, demand-driven, and lean-efficient supply chain with a focus on a new paradigm for achieving breakthrough results and competitive advantage in customer service and profitability. In this white paper, we present the summary of the webinar insights, from our Senior Partner and Book Author, Euclides Coimbra.

Why do we need to improve the supply chain?

As supply chains are key to operating in a globalised fast-paced market, it is crucial to be aware of the problems, opportunities, and new paradigms that can be applied to make them faster, more effective, and more profitable.

The main reason why supply chains need to be improved is to guarantee customer satisfaction - a major source of innovation and competitiveness. Supply chains need to become customer-focused, agile, and waste-free, quickly anticipating disruption and instability, and responding to the increasing customer expectations in markets with high demand volatility.

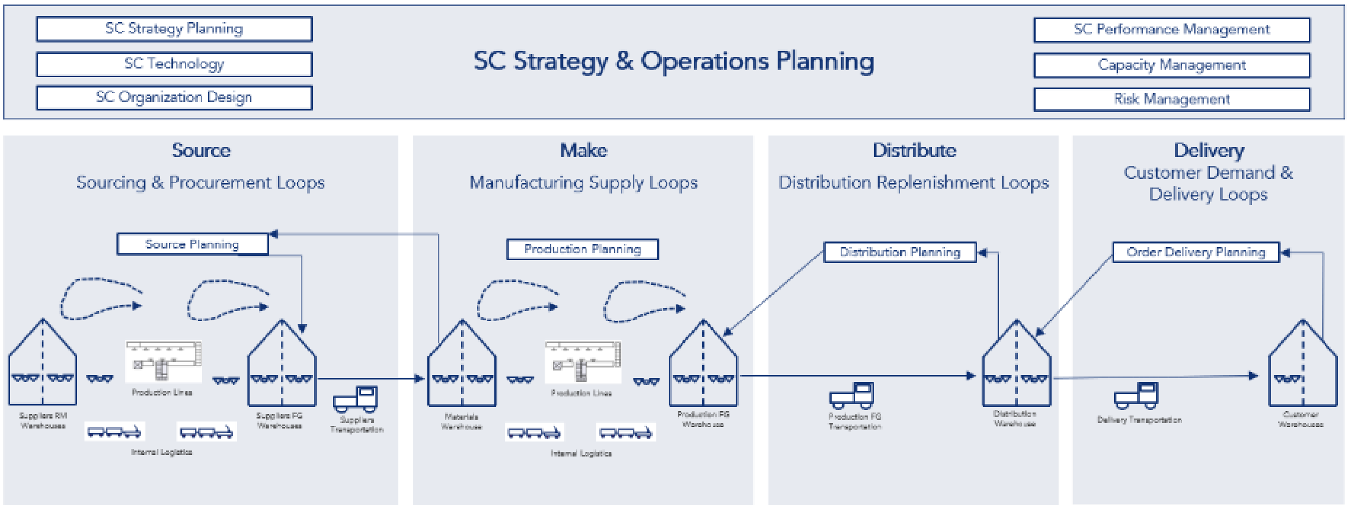
The targets for a lean supply chain are to improve OTD and OTIF, shorten delivery times, reduce costs to serve, and, most importantly, achieve a radical inventory reduction. These may be achieved by applying the following seven key capabilities, backed by a strategic value stream analysis, customer-oriented sales and operations planning (S&OP), short and consistent flows, and high resource efficiency.

1. Strategic end-to-end mapping of the supply chain

Mapping the supply chain from E2E allows for a visual identification of the critical operations. When understanding logistics loops in the supply chain, it is relevant to consider the key performance metrics to consequently identify where the flow breakers occur.

The most important KPIs in the supply chain are the ones that are related to the customer, namely OTD, OTIF, and Order–Delivery Lead Time.

These happen in the last logistics loop (downstream), where the operations are closer to the customer, for instance, orders delivery and transportation - so, these should be the first metrics to be optimised.



In the previous loop, the distribution replenishment, the KPIs are related to supply chain flow efficiency, such as inventory flow lead time. The second loop regards manufacturing supply and is more difficult to monitor due to the complexity of the production processes. Ultimately, the sourcing and procurement loop refers to the suppliers and material warehouses, and these supply chains which are upstream must also be analysed as they affect the customer KPIs.

On top of these four logistics loops, there must be consistent supply chain strategy and operations planning, based on an efficient value stream analysis and loop selection, to then move to the project execution phase through the implementation of Kaizen™ practices.

2. Implement a pull-planning system

The traditional approach to supply chain agility comes from Collaborative Planning Forecasting and Replenishment (CPFR) based on central information systems such as MRP or DRP. However, forecasts may have errors, impacting the delivery to the customer negatively. To solve this challenge, and to achieve improved synchronisation and levelling, arose the pull-planning system – a new paradigm of pull, demand-driven supply chains.

In terms of S&OP, the right approach is a pull capacity planning process that uses aggregated forecasts to set all the capacity needed in the supply chain – the number of trucks, warehouses, lines, etc. However, the actual execution of S&OE is not based on forecasts but on actual orders to replenish or to make to stock/order.

In the distribution centres, on the supply chain loops, the system entails the creation of flow with small-batch agility and the flexibility of capacity. This is attained through the establishment of high-frequency replenishment, transport loops, small batches, and the definition of a stock strategy with supermarkets (demand-replenished stocks) and cross docks.

Hence, the new system works across the whole supply chain to create pull with synchronisation and levelling. This will increase value-added efficiency, and, ultimately, increase OTIF and resource efficiency, reducing delivery delays and increasing working capital.

3. Create material and information flow

The third key capability concerns the creation of physical flow in production, warehouses, and transportation. In this context, there is a new key paradigm - the flow efficiency must be improved for later to improve resource efficiency.

Part of the waste defined by Toyota – excess production, material (or information) waiting, and material (or information) transport – must be eliminated when creating efficient flow and this should be the first step to be taken.

Only then the focus should move to the remaining waste related to resource efficiency – people waiting, movement, overprocessing, errors and defects. This strategy of creating flow will redesign the supply chain to new levels of performance.

4. Increase resource efficiency

Once the flow is created, the attention can move to increase resource efficiency. The aim is to optimise OEE in production, efficiency in warehouses and in transportation routes, as well as innovate with digital and automation technologies. To do so, OEE losses – availability, performance, and quality losses and labour losses – poor organisation or ineffective management and energy & material losses need to be improved.

The key activities to improve OEE are Kobetsu Kaizen, Autonomous Maintenance, Planned Maintenance, Education and Training, Early Equipment Planning, and Safety and Environment.

To improve the labour losses layout and line/warehouse design supported by Daily Kaizen can transform the procedures of the operational teams. For energy & material losses, Kobetsu Kaizen together with green frameworks will deliver substantial results.

While implementing these improvement initiatives, the previously designed pull flow system blueprint must be guaranteed to avoid the automation of waste. It is important to understand which activities in the supply chain are considered waste and which are value-adding to eliminate waste and focus on the value-adding part when investing in improved automated solutions.

5. Reinforce the Kaizen Culture

The reinforcement of the Kaizen Culture is crucial for the supply chain improvement, aligning the effective functioning of the previously presented frameworks. The most important steps to creating a continuous improvement culture are the implementation of Daily Kaizen in teams, Kaizen events, the creation of a strategy deployment process, and education and training, with a Kaizen Lean Academy that teaches these 7 capabilities of a lean supply chain.

The Daily Kaizen System must be adopted by all teams from every level of the organisation, involving all employees in frequent Kaizen actions with a special focus on developing team leaders. This system encompasses a frequent control of key KPIs to support actions on real data, identify wins and losses, and act quickly with countermeasures when there are problems or disruptions.

6. Manage change, instability and risk

Senior management must be engaged in the end-to-end supply chain transformation, participating in strategic mapping workshops, taking leadership in execution, participating in training programmes, implementing daily Kaizen in their own teams, and learning the strategy deployment process.

This way, they will improve their capability of answering to eventual instabilities and risks and achieve a competitive position in the market.

To react quickly to instability, a management system named 'Tiered Help Chain' must be applied. This will allow the classification of how the critical information should reach senior management, aligning information across the tiers, and identifying the necessity of cross-functional meetings.

7. Pilot, assess, benchmark and scale

The last key capability to implement an effective lean supply chain transformation is the necessity of developing good pilots and assessment maturity models, performing internal and external benchmarking, and moving rapidly with deployment and scale progression.

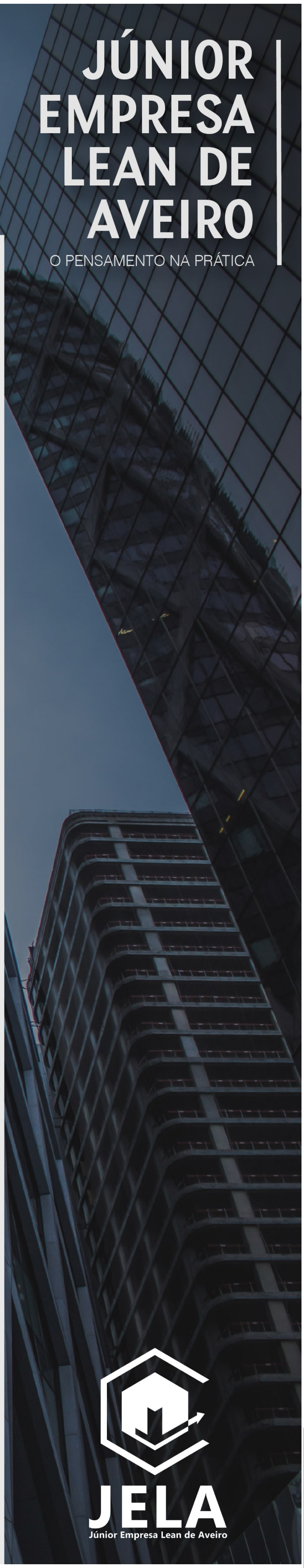
The strategic end-to-end pilot value stream analysis workshop goals are to set a vision and business case, define a steady progress roadmap with three to six-month sprint cycles, create a war room for visual project management, and show double-digit business results.

After a successful sprint – the pilot - deploying the new processes within a large organisation can be difficult. To facilitate this process, the team development programme lays out the scaling of the new process in five steps (image below).

For additional insights on supply chain transformation, you can read the book KAIZEN™ in Logistics & Supply Chains or email the author at ecoimbra@kaizen.com

Team development programme (TDP)

Júnior Empresa Lean de Aveiro (JELA), a non-profit organization, is composed by students of Engineering and Industrial Management of the University of Aveiro (Portugal) and whose main purpose is to put the Lean Philosophy into practice. It holds events and workshops about Lean in the academic community, with several successful editions and many renowned speakers. It also has an important role in the business environment, implementing projects related to continuous improvement on the industrial sector.



LEAN CONFERENCE

LEAN CONFERENCE 8ª EDIÇÃO

On the 24th and 25th of May, JELA will hold the 8th edition of Lean Conference, one of the biggest events at University of Aveiro, whose main goal is to bring together students and companies from the most varied areas, in order to present the different applications of Lean methodology, as well as the way they are performed.

This year we are motivated to work with the purpose of returning to what is the presential structure of the event, through an innovative agenda. The event will be attended by speakers and companies from the most diverse areas, who are familiar with the Lean philosophy.These will be 2 days dedicated to lectures, workshops, networking and gemba walks.

We invite you to visit our website, where you can find the event's agenda, our partners and all the information you need to sign up!

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TLM

CHECK YOUR BRAIN AT THE DOOR!

ARE WE PREPARED FOR UNBELIEVABLE BOREDOM ONCE AGAIN?

*by **Julie Savage-Fournier**, who uses executive coaching and Lean expertise to achieve the implementation of Healthcare systems where humans can contribute by their ambitions, and **Ruth Stanley** Founder of Boann Consulting, experienced in Quality and organizational excellence.*

Now that we have mastered these remote meetings, let's talk about on-site meetings. What? We know how to lead those; we will just return to how things ought to be! Or not? Do we go back to checking our brains at the door?

We experienced some setbacks in moving from on-site to virtual meetings, we also experienced advantages. Why would we go back to how things were when we have an opportunity to improve? We made meetings shorter, found ways to interest and engage people, and made the most of the technologies available.

Some people were able to thrive while remote working. How can we make our on-site meetings worth the effort to dress up and commute? Because that's the issue we are facing, most people know there is another way of doing things, and it worked for two years. If we are going back to the office, it must be better than sitting in yoga pants with our snacks within arm's reach and our pet as company.

There is a special group of people that benefitted especially by these newfound meeting strategies and the freedom to design their own workspace at home. They are called "*neurodivergent*". Why would they leave their safe space to put on a social mask again? They had been hiding for a while and some were miserable in this position.

Who are neurodivergent people and why do they matter?

"*When I was growing up, we didn't know about this stuff. People were labeled as either normal, heart lazy, stupid, or weird. I always suspected there was a reason why people do what they do.*" – Ruth Stanley

Neurodivergent people are anyone whose brain functions in another way than what is expected from the majority. Neurodivergence is an umbrella that includes a vast range of variations from the norm. These variations can be co-occurring in the same person. The most common are high potential (gifted, high-IQ), ADHD (attention deficit disorder with or without hyperactivity), and autism. Lesser known variations include dyslexia, dyspraxia, hypersensitivity, etc. The list can be long and new characteristics are being discovered with the evolution of neuroscience.

These are hidden characteristics that affect the workplace. You can't tell by looking at people that they may function differently from the norm. A complicating factor is that adults, especially if they are employed, have learned to mask their challenges. This masking does take away from their thinking energy and may limit their capacity to fully participate in workplace events, meetings, or workshops.

While mostly unnoticed, a surprisingly large number of people are affected by neurodivergence. The estimates range from 1 in 4 to 1 in 7 persons, depending on the sources. As the science evolves, we know more about how the brain works, the detection criteria are refined, and the numbers grow as well.

Now that we suspect that neurodivergent people were able to more fully participate in virtual meetings, what else can we learn from their experience to make our onsite meetings as inclusive and welcoming? How can we save everyone from the boredom and frustration of the old-style meetings?

Is it hard to be inclusive? Not really!

"*Now we know about these things and that there are easy ways to fix them to allow people to use their full talent, isn't it worth the effort?*" – Julie Savage-Fournier

Neurodivergent people operate at the higher or lower ends of the normal curves measuring cognitive functions, making it sometimes easier and sometimes more difficult for them to perform specific tasks. However, most strategies to help them reach their potential are useful for others as well.

Reducing distractions and allowing dedicated deep focus time is essential to someone with an attention deficit. It may also helpful for most people. There is a subtle difference worth noting: knowing what our brain needs at its limits also informs us on how to make it work best within the norms as well. A showstopper for a neurodivergent person is often a point of friction for many others.

> *Many Lean practices and principles are friendly to neurodivergent people.*

Being flexible and accommodating in our ways of working reduces the mental effort and increases the comfort for everyone. Accepting different behaviors and requests with an open mind relieves everyone of the pressure to look and behave like everyone else. Can you see where this is going? Psychological safety, creativity, engagement, and ultimately respect for people are essential requirements for everyone.

Oh, but that looks like anarchy! We can't accommodate everyone all the time, that creates chaos! What about the standards? The procedures? – This is where it gets interesting! Many Lean practices and principles are friendly to neurodivergent people. This knowledge can become a selling argument for your next event. Isn't it great?

Clear processes and expectations, visual process management, coherence and purpose (hoshin kanri), ergonomic workstations, they all make your workspace and your interactions more brain-friendly and inclusive.

Meeting with benefits: the checklist

With a little more preparation and thinking through your meetings, you can enable different ways of absorbing and processing information. We had to be creative for the last two years, find new ways to meet; and learn a lot about engagement and inclusion. Let's not go back to static meetings where one person speaks and everyone else zones out in their chair or answers their emails on their mobile device.

Here are some suggestions for your next event.

- Visual focus: In videoconferences, visual stimulation is high, speakers can be seen in close-up and the screen can be shared. These elements maintain the strong link between vision and attention. For in-person sessions, consider writing the meeting agenda on a whiteboard, and using Kanban boards for structuring meeting discussions. Visual facilitation and sketch noting are also great tools.
- Closed caption: Subtitles focus the attention, unload the working memory, and enable people to avoid missing things from listening alone Why not retain these subtitles in on-site presentations? Powerpoint has this feature now!
- Chat: The chat function helps with impulsivity. Being able to write down ideas at will maintains the flow of the discussion and releaves the social pressure related to speaking in front of the group. In person, using post-its/brain writing, flipcharts and whiteboards allow everyone to participate in real time.
- Motion: Fidgeting, walking around, doodling, taking notes all use a different part of the brain than listening. Some people need that part of their brain to be busy so they can direct their attention to listening. Wouldn't it be nice if we let people move around in the office space in a way that works for them?

The last words

This article was written building on the complementary strengths of two neurodivergent persons, mothers to neurodivergent kids and Lean practitioners who see the links between Lean and neuroinclusion that might not be as obvious to everyone. We, Julie Savage-Fournier and Ruth Stanley, hope that our suggestions launch your new and improved in-person meetings. We are sure that you will find many more ways to make your events lean, lively, purposeful and engaging for everyone!

CAN CI HELP WITH CURRENT BUSINESS CHALLENGES?

*by **Lauren Hisey**, uses a calming influence, Continuous Improvement, Lean Six Sigma and AI knowledge to help create effective change within any business to improve profitability and culture to drive sustainable growth.*

Since March 2020, or even before this time, we have dealt with a global pandemic that caused havoc and uncertainties! Globally we have seen our supply chains challenged, markets go up and down, and a considerable shift in employment with the Great Resignations. These issues have caused many organizations to think about improving operational efficiencies, finding ways to accelerate their Digital Transformations, and dealing with the Great Resignations. Organizations are running into issues with strategy, growth, and sustainability. They feel the crunch to move forward fast. Still, they are unsure how to get into the future without hurting their organizations and employees. It's leaving many leaders feeling doubtful and uncertain.

Current Trends

As I talked to more and more business leaders and my clients, I saw the same commonalities among all organizations. The size of an organization doesn't matter. I see the same thing from mid-size organizations to Fortune 500 and everything in between. The trends below are the same among all of them:

1. Growth and Excellence.

50% of CEOs require their companies to grow and achieve operational excellence.

2. Unrealize benefits…. lack of ROI (Return on Investment)

Digital Transformations are failing to deliver and losing steam. RPA (Robotic Process Automation) and AI (Artificial Intelligence) projects are not delivering the expected ROI. One of the main reasons ROI is not being met is flawed or lacks of processes. Technology shows you how flawed a process is.

3. Lack of Strategy

14% of organizations are unclear about where they are headed and what goals they are trying to accomplish. When you do not have a clear strategy, it can create competition between divisions that causes mistrust and zero collaboration.

> *An organization needs people, processes, and technology to exist in today's environment (...)*

4. Talent Shortage

40% of current employees are not happy and are leaving their jobs. The employee retention rate is going up globally as current employees assess their values and how their existing companies fit into those values. They are also looking at ways to advance in their careers and if their current employers can help them with upskilling and advancement. It is not all about pay; it is also about the benefits and how companies can help employees achieve their core values.

5. Lack of adoption and fear of job loss

As organizations are rolling out Digital Transformations and finding new ways to optimize, they see issues with employee adoption and fear of losing their jobs. 27% of organizations are getting stuck because of adoption issues. Employees are reverting to the old processes and not using the technology.

These current business trends are causing all types of issues across organizations. These problems are causing all kinds of headaches for business leaders. It leads them to feel the pressure to figure out the best way forward. While talking to my clients, they are wondering how to solve the problems they are facing:

- Unable to scale: How do they find the right to grow and scale?
- Lack of strategy: How do they remove conflicting priorities and redundancy? Where do they start?
- Inefficient processes that are causing waste and non-value-added work
- Lack of governance due to a lack of a future state roadmap causes confusion
- Talent Shortages! How do they keep their current employees happy and help them learn?
- Rising costs due to all of these problems!

Can Continuous Improvement help with these challenges?

One of the most frequent questions clients ask me is how I can help them. While I can give general statements about how I helped clients in the past, it is more than applying CI knowledge. It is about connecting and truly understanding before I can provide observations and ideas. I like to tell my clients that I want to partner with them and their employees versus me telling them what to do. I help guide them along the journey to get to their Future State. Once my clients get past cutting costs, I think we can start the journey.

An organization needs people, processes, and technology to exist in today's environment, no matter how small or big and regardless of the industry. CI is a connector between people processes and technology. CI is industry agnostic and can be applied to all areas……yes, even to the front and back offices!

Instead of thinking about what methodology is better to use, remember that you should use the right tool for your situation. What works in one case may not work for another. If my clients have not used CI before, they often ask me about the best industry practices. I often tell them what I've done with other clients in a similar situation. We still need to use the right tools and solutions that fit their organization, processes, and people. I've learned that what has worked for one company may not work for another. It is not always about what is the best tool. Shigeo Shingo put it best, "*There are four purposes of improvement: **easier, better, faster, and cheaper**. These four goals appear in the order of priority*." Once you change your thinking to these four goals, it becomes easier to see that you need to find what is best for the situation. We often spend too much time researching complex solutions. Instead, we should find the best improvement that will help the business become "**easier, better, faster, and cheaper**." I also coach my clients to find the simplest form of progress first, even before buying the new shiny, flashy technology tools. Sometimes a simple process improvement and even low-code or no-code automation may be the best thing to do. Starting small and then moving into more advanced items is always the best way.

So how can CI be applied to help with these challenges?

1. Level up strategy and transformations.

Before anything can be done, leaders must understand their business intent and what goals they are trying to achieve. They need to define their strategy and then create a roadmap for now and the future that includes people, customer personas, processes, and technology. The roadmap needs to be transparent to all levels of the organization. It is about communication from the top-down and down-top. Usually, the best place to start is somewhere easy, like the back office: accounting or finance.

2. Current state assessment

This is not the time to debate which methodology to use. It is about assessing the current state with the correct tools at your disposal. While many hate using the "toolbox" approach, it is still the best analogy here. A plumber can't tell you what is wrong or what tools he will use until he knows what is going on. The same concept applies when using CI tools.

3. People

It goes beyond communication! It is about empowering and trusting your people and allowing them to become a part of the solutions and Future State. Doing this will increase collaboration, employee satisfaction, and productivity. Telling your people that you want to help them and make their jobs more efficient will show what the change means for them. It will give them a chance to decrease over time and have more time to upskill. Investing in your employees goes a long way toward having employees trust leadership and the company. It starts to show that they feel valued, and they become happier.

4. Business Optimization

You want to optimize your business process with process improvement and technology to help get you to the desired future state! After knowing what is wrong and including your people, you can then start to work toward improvements. Solutioning or whatever you like to call it is all about fixing the root causes of the problems. It is about redesigning the processes from end-to-end to remove the waste, non-value-added work, bottlenecks, and inefficiencies. Use the right solutions that fix your problems.

5. Future State Roadmap and implementation

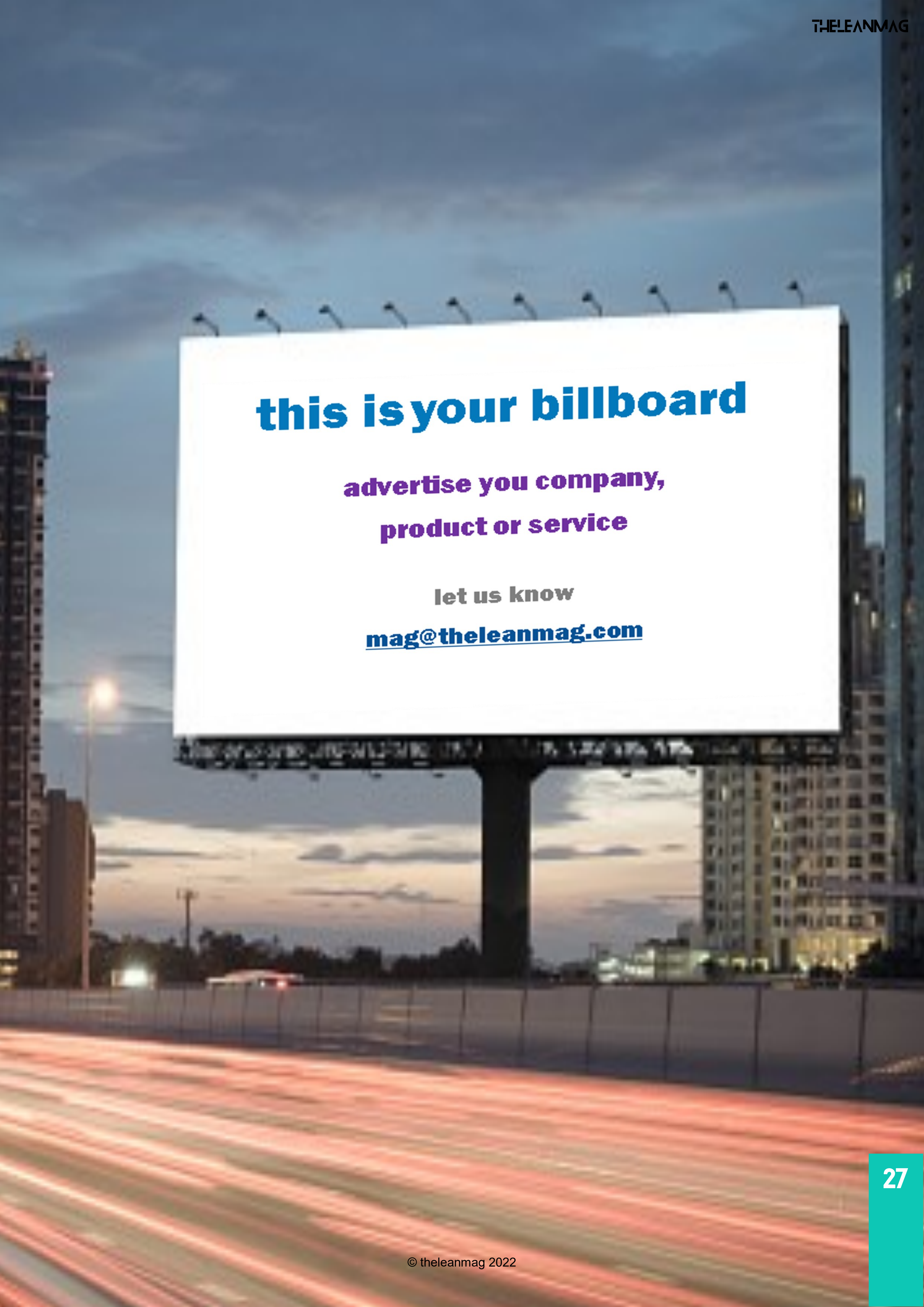
While the roadmap was created early, it did not include detailed solutions and implementation phases. First, you need to update the plan accordingly, and it's time to get to work! This is where you set up the program through all Implementation Phases that can be grouped to allow you to use an Agile format. Your organization wants to start small and ramp up. In my days at Nielsen, someone described it to me as first designing the bicycle to get started and then finishing with the fancy sports car. But along the way you make adjustments through iterations to get where you want to go. Start slow to get you on the journey to the Future State.

Celebrate the successes!

As you complete a project or transformation, it is essential to celebrate the successes of each achievement. It would help if you celebrated what is going on with the group that has completed the improvements. It is also essential to share it with the entire organization. These successes and their celebration will get other areas of the business excited. Once you start implementing in one part of the company and share your success, others will want to be a part of the transformation. Celebration of the efficiencies, the people, and the fantastic work can be contagious. The entire group of people a part of this must be celebrated. It will show that leaders believe in their employees. Others will see that CI brings more than cost savings; they will learn more about improving their work areas to become more efficient and uncomplicated. It will allow them to be celebrated, be happier, and spend more time outside to be with family and friends. Seeing how their work pays off, the wins and celebrations keep people looking for more ways to collaborate to continue down the CI path. It can get contagious! So celebrate those wins!

What's next?

While the business challenges that we face today may not disappear suddenly, you can undoubtedly use CI to lessen the impact you feel from them. As a society, we often want a quick fix to problems, but I think the last two years have taught us that these quick fixes are only temporary. CI teaches that we must continue to improve one step at a time and be willing to experiment until we find the right path. Even if there is a failure or setback, it does not mean you are not improving. You are learning what works best. It is these learnings and failures that help to achieve the best results. That is why it is so vital to understand the business goals. Once you know the purposes, you can start down the CI path with your strategy and transformation while connecting the people, process, and technology together. An organization can not exist without all three; it is the connection between the three that CI helps to bring together.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THREE METHODS OF INTEGRATING KNOWLEDGE SHARING TO SUPPORT LEAN IMPLEMENTATION

*by **Cynthia J. Young**, founder of CJ Young Consulting, LLC, a knowledge management consulting firm, which, through a human-centric focus demonstrates that having a knowledge management mindset supports overall organization health.*

Why is knowledge sharing important to an organization?

Have you ever been frustrated because somebody knew something that would have helped you to complete a task? What about you? Have you held back something you knew because you're afraid somebody would get ahead of you?

Knowledge sharing is not just about the aspects of sharing a written process or procedure. It can be easy to e-mail the document or a link to a record, but will the workforce perceive these actions as supportive or directive? What's more effective is to share tacit knowledge or knowledge based on experience. Tacit knowledge shared as a short phone call, as part of an e-mail, or in conversation with someone over coffee becomes beneficial to all in the conversation.

Knowledge sharing is also about building trust between you and your coworkers or your team. There are many reasons not to share knowledge, but more so are reasons to share knowledge. One reason not to share knowledge may be because it's business-sensitive. You have a limited group of people that you can talk to; however, in most cases, hoarding knowledge does more damage than sharing knowledge.

Ensure prioritization of knowledge sharing within the workforce.

Prioritization of knowledge builds trust. Sharing what you learn on management calls may seem blah or just another work call. If you ask your workforce, they may tell you that hearing something you didn't think was significant helped them with something they had been struggling with rather than continuing to suffer in silence. You helped your team by prioritizing knowledge sharing.

Another way to show your team that you are prioritizing knowledge sharing after conducting a Gemba walk is by debriefing your experiences on the walk. Consider what you do during a Gemba walk. You walk through the process or the procedure, watching what is happening and listening to what people say. You might also ask questi ons about a process or system. If you take what you've learned back to your team or share your observations with the people you're participating with throughout the Gemba walk, everybody will benefit from the knowledge you share.

Don't let knowledge be seen as a secret only shared with your inner circle.

Make setting time aside each month to talk to your team a priority. Let your personnel know what things are happening outside of their daily work. For instance, if you are participating in a management meeting, some of the knowledge shared may apply to them and affect what they are doing. By sharing what you are hearing, you show the workforce that you trust them and rely on them for feedback.

Purposely sharing knowledge builds inclusion and trust with your team. You are focused on building a team or teams to meet deadlines, support customer needs, improve communication, and improve culture. This is important when implementing new processes or policies such as when lean is implement in an organization where individuals may have limited experience in lean. Embracing a culture of knowledge sharing and rejecting knowledge hoarding supports inclusion and trust in the organization.

Eliminate the waste of non-utilized talent.

Eliminating the waste of non-utilized talent may sound easy, but it's actually a challenge. Organizations may rely on an "A" team to get things done quickly rather than support the improvement of the workforce. One way to eliminate the waste of non-utilized talent can be by encouraging knowledge sharing and making it part of an organization's culture. By making knowledge sharing part of organizational culture, everybody understands that knowledge sharing is valued.

An organization can reveal talent within the organization by advocating knowledge-sharing activities such as lunch-and-learns, incorporating knowledge sharing as part of the

performance evaluations, or rewarding employees based on the level of knowledge they share. Through these knowledge-sharing activities, previously unrecognized employees will feel confident sharing their experiences and know-how. Leaders become aware of the expertise in the workforce and can support challenges with their current personnel.

Another benefit of eliminating non-utilized talent is opening the aperture for internal promotions. Organizations save money and time since they don't waste time and assets looking for a new person to join the team. The organizations also know they have someone who is a good fit for the organization and begin working in the position immediately while retaining corporate knowledge.

Conclusion

Implementing lean may be the ideal solution to an organization's problems, but it may also come with many naysayers. Change can be hard on people who may not know how to implement lean in their part of the organization and may fear failing. Embracing knowledge sharing can support lean implementation by prioritizing knowledge sharing within your workforce. It's not about hoarding knowledge for your inner circle but making knowledge sharing a continually utilized practice in the organization.

Integrating prioritizing knowledge sharing in your workforce, preventing knowledge hoarding, and eliminating the waste of non-utilized talent through a knowledge-sharing culture all support implementation or strengthening lean in an organization. Formalizing the knowledge sharing may start as a challenge as any other organizational change. However, if an organization takes on the challenge of lean implementation, sharing knowledge will be seen as beneficial and quickly adopted, with learning flourishing as the organization continues to support the lean implementation.

TLM

WHAT IS YOUR LINE OF SIGHT TO THE COMPANY BUSINESS INDICATORS?

*by **Tracey** & **Ernie Richardson**, at Teaching Lean Inc., Lead and coach a wide variety of businesses to focus on the "people side". Authors of The Toyota Engagement Equation book- Shingo Publication Award winner 2018.*

In a company sense, what is the first thing that comes to mind when you hear this question? Often times within certain organizations it can be a "gap creator". What we mean by that is, having a "line of sight" often means a process owner should be looking towards a specific direction with a goal in mind. In the case of a business or an organization we frequently call that – *True North (Some call Vision or Mission Statement).* We have found throughout our travels that not every place we visit has a clearly defined one. What could be the repercussions if we don't have one?

With my roots being from Toyota I often reflect on the true north statement that was always there during my time as our company's guiding beacon; no matter what an individual did or what level they reached in the organization vertically or horizontally you could connect your daily work into that statement. In The Toyota Engagement Equation Book, we talk about this process before it was so formalized years later.

For example, a true north statement could look similar to this:

We will always put the Customer first, while making the highest quality product, at the lowest cost, in the shortest lead time, in the safest manner, all while respecting our people.

I remember when the Toyota Business Practices (TBP) 8 step Problem Solving process was introduced to us at the plant in 2004, it was the first class that embedded this line of sight activity within all our work. We had to look deeply at each A3 and determine was the ultimate goal of solving the problem tied (measured) to current KPI's. This created a need for us to deeply demonstrate our knowledge about the process as a learner and eventually a coach in the process. It is crucial to know the "why" of the work.

As you look at the true north statement you can visualize the key performance indicators (KPI's) such as quality, cost, productivity, safety, and human resources (Q,C,P,S,HR). These indicators are what drive the company to improve their processes which in turn assist those results we all tend to focus on heavily.

This type of true north is evolutionary, meaning if you reach the lowest cost then raise the bar on yourself and continue to improve it (continuous improvement/ kaizen). I've seen true north statements say something like – "To be #1 in the market." Although I feel that is misleading at times, but the more important part of that is the customer- is that the first thing on their minds? We often have to be careful with such a result-oriented direction or statement. It's more so about the _processes / thinking_ that get us there. Being #1 is the bonus for good thinking, not our first target! My trainer used to tell me if you invest heavily in the process (how you work), good results with be the result as long as we engage, involve and empower those creating the outputs, services, or products (visible/ invisible).

The true north example above, allowed us to look at our own work as the business goals cascaded downward from the 50,000 foot level of the organization to the 1000 foot level. It's essential that everyone articulates what they are doing to contribute and measure. If they fall short of that then we could ask the question- "How value-added are we"? Let's take a look at how a sequence of questions can align us to that true north and ensure we are adding value.

During our sessions we embed the time to ask specific questions in regard to the *line of sight* activity. It normally is a real eye-opener to some as they realize what they are doing (sometimes reacting-i.e. firefighting) isn't always contributing towards the company goals in the best way they could be. It can really be alarming when we have found our standards are now how best to process rework. These questions below should weed out the non-value add if we have the discipline and accountability to ask them.

The first question I ask them is – _What is your role in the organization?_ This makes them think about their role or scope of work. This may seem like a simple task to many, but it's "deceptively" simple as we continue to ask more questions. Believe it or not, some struggle with articulating their specific role. It's often not always defined by our leaders from day one nor do we have time to invest in that in the current market. What is the price for not investing or holding ourselves accountable?

The second question is – _What is my work responsibility?_ This allows you to think about what you are truly responsible for in your daily work in regard to your role. What is all involved with my responsibilities? Sometimes we ask "why did the company hire you?" How are you going to add value? What is your true responsibility in regard to the business goals?

The third question I ask is – _What is your job's purpose?_ This particular question begins the thinking process, most come back and say – "what do you mean what is my purpose, my purpose is to do what I'm told?" I grin inside as they continue the exercise, because it continues to challenge them further and gaps begin to surface. It's hard to take sometimes but we all should drive our purpose towards specific standards which contribute to the business need. Otherwise, are we spinning our wheels? Just as we all have seen the "Got Milk" ads in the past – I ask, "Got Purpose?" This can be a challenge in the leadership levels, they really need to grasp this thinking in order to share it with those doing the work and first line leaders. It is a cultural responsibility we all should take seriously and with pride. There was never a time when I didn't feel part of something special at TMMK, mainly because I understood the depth of my role at each level.

The fourth question I ask is – _What are the goals that guide your job's purpose?_ Am I making this more difficult or what? I normally start see people staring to the left to the right depending upon what side of the brain they are pulling information from. It's an interesting process to witness because some have never thought of it in the context I'm making them think of before. Some say, "What do you mean the goals that guide me? - I met the results, isn't that good enough?!" This is where I give them a hint towards their key performance indicators. Everyone's job _has_ to be aligned with those key performance indicators we discussed before. If not how do you really know if you are creating value? How are you measuring your own work back to the company's goals? This is why true north and cascading goals are essential in a culture focused on people, purpose, process and problem solving.

The last question I ask is –_What are the company goals?_ This empowers them to align themselves with true north and how they contribute. As I stated before, how do you go from the 50,000 goal to the 1000 foot level. It's an upward cascade regarding your work that parallels with the

downward cascade of the strategy deployment of the business plan. Once I finish the series of questions I tell them to write "My own Ideal Situation", to the side. What we have created in essence is that very thing. If we know our role, purpose, the goals that guide us, and the company goals then we should be able to articulate with our daily actions where we are against that standard at any time. When you lower the river to see the rocks it's your own personal development towards the company's goal which in turn proves your contribution to long term sustainability and growth due to your actions aligning. We also should be versed in the company values as well, bringing them to life in tangible ways people can see from us and measure. When they don't align you can always ask why and understand what is keeping you from those goals. (Almost like a background A3 running in regard to your own performance- imagine that)

> *"Being #1 is the bonus for good thinking, not our first target!"*

Let me show you a very simple example that we share with our clients during our sessions that I (Tracey) did for my own line of sight as a problem-solving instructor when I was a Human Resources contract trainer from 2000-2010. Yes, I/we try to practice what we teach and demonstrate knowledge.

My role – TBP Problem Solving Instructor

My work responsibility – is to learn, understand and practice the problem-solving process /thinking (PDCA) and also how the company values/ principles are intertwined with that thinking to deliver training sessions to various organizations.

My job's purpose – to effectively deliver the problem-solving process to any level /role within the organization that ignites a culture of ongoing thinkers who are able to see gaps against a standard. (*Note I underlined effectively in the sentence above, I measure my effectiveness as an instructor during and after a class to see if I'm meeting their expectations).

What are the goals that guide my job's purpose – for my participants to learn, understand, practice, and develop their people in problem solving in order to fulfill the company's values and true north vision. (*Note I underlined develop in the sentence above, it is part of the goals that guide me that I teach at a rigorous level so participants can not only learn themselves but also eventually develop others)

What are my company goals – to fulfill the customers' expectations by providing, high quality training, which enables them to do business differently by changing how their people think and do business.

So this is my personal line of sight, which I consider my ideal situation. It's evolutionary and constantly makes me improve how I teach based on the customers' response.

In essence it's a gap creator for me that I always look at as my standard and where I am at against it. When I fall short, I look for ways to improve and raise the bar on myself.

In closing, I hope this column gives some insights toward your personal line of sight within your company and your role, but further more do you understand the importance of everyone having one that leads upward to the company true north. This makes it much easier to cascade your business plan down through the organization. If people don't understand it, they tend to be reactive; reactive isn't something you want to develop has a habit. Now let's get to aligning ourselves!

40 HOURS IN CONSTRUCTION!

THE READER'S CORNER

*by **Jake Harrell**, a sucker for a good process, creating environments that makes it really clear how to win, then convicting you, seducing you, into wanting the win.*

I am a glutton for punishment. I live to expand my horizons by stepping out of my expertise and experiencing new hurdles in business. After coming to know the famous Felipe Engineer-Manriquez, and falling deeply in love with his content, I decided construction would be a fine place to dip my toes. To preface the bias of my assessments, I must tell the reader that I have NEVER been to a construction site until February of 2022. My career has been in supply chain, distribution, transportation and most notably in the third-party logistics space. I love this environment because it is mostly comprised of people "making it happen". All of the best achievements in continuous improvement have come through real breakthroughs in how people behave, and how their actions are associated. I truly felt as if construction would feel exactly like this world, just outside on a field of dirt rather than inside a warehouse. (Trust me, inside of there is still a field of dirt).

I was pleasantly surprised to really feel as if this was EXACTLY the case. During the 40 hours I spent at work, across 6 separate companies, I learned that the absence of the fundamentals of communication were glaringly obvious. How leaders create value for the organization was largely unknown, and people consistently doing very little work while pontificating about how busy they were. I am not utilizing this platform as an attack, but rather to share a rampant commonality that purveys both industries. Sufficient effort isn't put into communicating, and because of this, leaders become no more than "information brokers" with very little time to lead anything. Given the Superintendent is the substitute for an actual communication plan, their only meaningful source of value add is to jump in and make decisions that should/could have been automated.

I have seen elements of this in every single warehouse I have ever worked with.

(This ACTUALLY happened to me)

Leaders reacting so much that they live “within the business” rather than living to work “on the business”. 1000 text messages a day. Hundreds of emails. Dozens of phone calls, and a myriad of meetings with varying purpose.

This is a comfort zone for a few reasons that are hard wired into who we are as human beings.

- This business strategy makes us FEEL important
- This business strategy makes us FEEL valuable
- This business strategy makes us FEEL psychologically safe

Now these are all great things to feel. I should know, I am a human after all.

However, this NOT an efficient, effective mode on how to run a business. A Superintendent behind a closed door helps *nobody*. A superintendent in meetings all day helps *nobody*. A superintendent on his/her phone helps *nobody*. A superintendent in a trailer all day helps *nobody*. A superintendent anywhere other than the job site is nonvalue added waste. Enforcing a communication plan resolves all of these problems, how abouts we share an example that ALL of the 6 companies I spent time with could use and leverage for continuous success.

Step one: Design some rules that all trades and trade partners will follow. Rules beginning with behaviors you won’t accept. Behaviors such as:

1. I will NOT call if the discussion point could wait more than the same business day.
2. I will NOT send an email if the discussion point could wait until the next business meeting.
3. I will NOT text if the discussion point affects whether or not today’s goals are met.
4. I will NOT use communication to deviate from the daily alignment.

Step two: Now that we have the behaviors we will NOT allow, we need to provide the communication rules we will PROMOTE. Behaviors such as

1. We WILL meet daily to discuss our intended goals.
2. We WILL communicate any constraints to achieving our goals in a daily alignment.
3. We WILL hold ourselves and our partners accountable for sticking to the communication plan.
4. We WILL evaluate the success of the communication plan regularly.

Step three: Now that we have the behaviors we will and will not accept, we need to iron out the details of a daily alignment meeting. Now in the companies I observed, I have to say something that really surprised me. *WOW, there are A LOT of stakeholders.* There are dozens and dozens of people that need to be in the loop across many channels, companies, and layers of management to make even the smallest of adjustments successful. Thankfully, the use of the tried-and-true tier system can facilitate this happening effectively.

The tier communication methodology is a simple concept. Each functional group has a meeting each day to review goals, set alignment and discuss constraints. For construction this may look like the following. (Multiple small meetings conducted at the same time.)

08:00 with foundation folks

08:00 with electricians

08:00 with crane operators

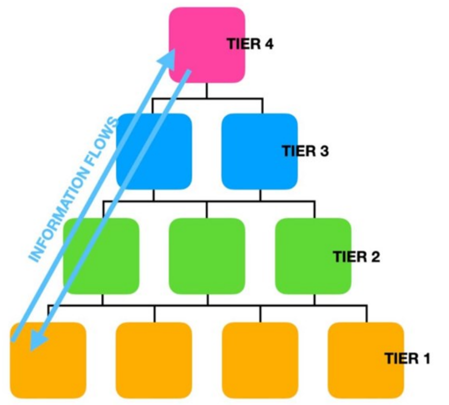
08:00 with engineers

08:00 with plumbers

08:00 with accounting

08:00 with project management

The idea here is that each functional group is small enough, so the meeting is fruitful. Real discussion, real details, and issues are put to rest. Target a tier group no larger than 12 people, and if you need to have 2 electrical meetings so the 24 electricians can be effective then so be it. As soon as you pass that 12 mark, the group becomes large enough to disengage and “get away with it.” Once you have these meetings, the trade foreman from each group listed will meet at the top of the hour with the Superintendent. During this meeting, individual contributor roles should attend to ensure information is shared both upwards and downwards. Information makes it to the superintendent, while information makes its way back from the trade foreman down to the individual trades. This may look like the following.



09:00 with foremen, Superintendent, sales, project management, safety, and billing

Now that we have a strategy in place, the Superintendent’s job needs to shift away from working “in the business” (sending emails, endless phone calls, meetings, texts, etc.) and shift to working “on the business”! More time is spent following up with site tours, validating the goals for each trade are being met, and being proactive where gaps are observed. The communication plan itself becomes another trade in the field from the eyes of the Superintendent. Enforce it, set goals, spend time following up on it. Now moving to this as a strategy will be one of the hardest things an information broker has ever done in his/her career. You will have to be willing to give up that sense of control. That dopamine rush you get when you react and “save the day”. Everything that got you into the position of a Superintendent will NOT get you further. Now is the time to use systems and structure to engineer the outcomes you want, rather than working harder and harder to keep the whole world together.

Now I get it, 40 hours doesn’t make me an expert. In fact, it doesn’t even make me an employee. It is entirely possible that all 6 companies I spent time with are the only 6 in the world that have busy Superintendents. The only 6 that spend 80% or more of their time communicating without a structure. The only 6 that could save time and gain back a real leader in their workplace. I am writing this blog as an open letter to all construction experts. Do you disagree? Do you think this is far too rudimentary? Keep the conversation going and connect with me. Worst case, I get to learn more!

MEASUREMENT SYSTEMS ANALYSIS FOR THE FUTURE

THE READER'S CORNER

*by **John Knotts**, who has an extensive background in strategy, change, process, leadership, management, human capital, training and education, innovation, design, and communication.*

How important is having valid data to make decisions when it comes to running your business or making improvements to your processes? I bet you are saying, "Pretty important!"

The question is, "Is your data valid enough to allow you to make good decisions regarding your business?" The real question is, "Is your measurement collection system good enough to provide valid data to make decisions with?"

The answer to this question today is the Measurement Systems Analysis (MSA), which is an approach that many use in process improvement. The MSA analyzes the validity of the tools used to collect measurements of the process in question. Plus, the MSA also validates the steps operators use to collect the measurement data.

If something is wrong with the tool you are using or the process being followed to collect the measurement data, you need to fix that first, before fixing the process.

The two typical approaches to validating your measurement systems are the Gage R&R Study and the Attribute Agreement Analysis. These both are what I refer to as, "Quantitative MSAs." They use math-based logic to verify that the measures being collected repeatedly by individuals and machines are the same or match a known truth.

We use powerful statistical software to run these analyses, but in reality these approaches really only need a good eyeball check of the data. Is one person getting the same measurements every time they measure the same thing? Is everyone getting the same measurements as everyone else on the same thing? That is only what these two approaches are really testing.

However, the world of data collection is changing in business today. Data is being entered into management information systems (MIS), sometimes by human data entry and other times by systems and machines themselves.

The challenge with making decisions from data that is pulled from a MIS is that you cannot run a traditional MSA on the data pulled from the system.

So, how do you validate that the data you are about to analyze and make decisions from is actually good data?

This is why we need a new MSA approach for the current business world. Enter the Qualitative Measurement Systems Analysis (MSA).

You will not find this approach in any Lean Six Sigma certification course or process improvement textbook. Whereas a quantitative approach works with data that can be counted and measured, a qualitative approach looks at the quality of the data.

This is particularly helpful in transactional processes, where you are downloading, reporting on, and analyzing large amounts of data pulled from systems. However, today many manufacturing processes are integrating data entry methods with things like tablets and computers right at the process. Thus, more-and-more data being used is coming from a MIS.

Conducting a Qualitative MSA is relatively simple. You can follow these five steps.

1. The first step is to pull the data that you plan to review and analyze into a spreadsheet format, using something like Microsoft Excel, Google Sheets, or Apple Numbers.

2. Examine the columns that you will use to analyze your data with. These fall typically into numeric data columns but could be text-based data as well.

3. Determine the expected format and range of the data. Do you expect numbers and no text? Do you expect text and no numbers? Do you expect a range of numbers (e.g., between 50 and 200)? Do you expect a specific format for the field (e.g., first name last name)? Do you expect any blank fields?

4. In each column, sort your data using the sort function. First sort the data in ascending order. Then sort the data in descending order. If there are any data that is not as expected, this will typically highlight these issues quickly.

5. If you have a text field that you expect in a certain format, you can do a quick scan of the appropriate column to search for text in the wrong format. For instance, if you expect the name field to be first and then last name without any punctuation, you can search to see if there are any commas in the data – when people enter the last name first, it is usually entered as last name, first name.

When you have irregularities with your data – the data does not meet expectations – this tells you that your data entry process is flawed. Thus, if you used this data as is, you could make significant errors with decisions. You would want to figure out why this is happening and fix it first.

Here are some common data entry issues that can cause bad data:

- The data field does not require an entry to move forward
- The data field does not have any validation to prevent erroneous entries
- The default option is often selected because it is the easy choice
- Entering a simple number, like a “0” or a “1” allows an operator to quickly pass by a data field
- Data is not updated between shift changeovers
- Users were not properly trained on data entry requirements before performing the task

These data errors in large runs of data can go unnoticed for weeks, months, or even years. If a dashboard has been built using the data, then the errors might remain invisible forever. This makes it important to periodically validate with a qualitative approach that your data is still good.

Below are some of the common issues that a qualitative look will capture that might go missed otherwise.

1. Fat-fingering data entry with accidental amounts that are simply too large or too small for the typical data range of the process. When data entry is all done manually, it is very easy for someone to accidently miss a number or enter numbers that have an extra digit.

2. More and more tablets and computers are used to record and collect machine downtime and changeover time and this is a place where several data entry errors can occur. Workers choose the quickest entry methods to speed through the data. I have seen where the default reason code of “Other” was used just because the workers did not want to search for an appropriate reason code. I have witnessed where they enter a quick time entry amount, like “1,” just to get past the screen. I have also seen where the workers start the downtime or changeover clock, but forget to stop it or there is a shift change and the new shift forgets to stop the clock.

3. Sometimes data format collected might change, especially if it is stored in a cloud-based SAS system. If you are making decisions off data that has changed, you might not be getting all the data. Also, if you are pulling data off some text-based filter, if this filter changes, it can affect the data that you are receiving.

4. The last popular aspect that I see a lot is data tampering. This is where people are, unfortunately, purposefully fudging the numbers to meet specifications or just make their operation look good. Typically, this will create a pattern of behavior in a MIS that looks different then everything else. A quantitative approach will not find this, where a qualitative approach can.

We spend a lot of time and effort teaching and using analysis tools like a Gage R&R and Attribute Agreement Analysis to ensure the validity of data collected. These quantitative approaches to data validation are still effective, but data these days are being reviewed from systems where these approaches do not work. Now is the time to start considering a qualitative approach to the information collected from our data and information systems. ■

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