FIVE MISSING PIECES IN YOUR STANDARDIZED WORK

So how is your Standard Work (SW) going?

Responses to that usually paint an ugly picture. Here's what I frequently hear:

"We just don't have the discipline Toyota has to make SW work."

"We put it in place but the people don't follow it."

"We have trouble transferring good SW from worksite to another."

"We are good at determining the One Best Way, but people always insist on doing it their way."

"People just don't want to follow it. They like to do their own thing."

"We put in an audit process, but the auditors don't follow the audit process."

I like to say that the Toyota Way is a socio-technical system on steroids. A test for all our lean systems is the question of how well we integrate people with process (the social with the technical). Nowhere does that come together more than in the form of standardized work and kaizen.

By that I'm saying much more than just pointing out that our corporate lean initiatives should involve both Engineering and Human Resources departments, each initiating programs to elevate the technical and the social dimensions of work. I am talking about the way work design embodies both dimensions at the micro level at the same time. When a worker bolts in the seat belt in the factory or an office staffer processes a requisition in the office, the work will be driven by both the technical and social aspects of the job design.

Leaders, be warned: you cannot simply dictate this from on high. You are in trouble as soon as you find yourself chasing compliance in pursuit of standardized work. You are chasing your tail and you'll never catch it. Rather than controlling the details of compliance, examine why the worker is not or cannot follow the standardized work. Ask, "Why can't you follow the standardized work?" The answer to that question – asked not accusingly but in a spirit of pure inquiry – will invariably lead you to unexpected places, usually quite far from the employee.

I'm going to go through five neglected or misunderstood or forgotten aspects of standardized work. Then, we'll explore how to think about standardized work for non-standard work, things like service industries, knowledge workers, creative work, and management. Finally, I'll provide a kind of "outline" that might help as a guide for you to think about establishing standardized work in your organization, centered around these five neglected aspects of standardized work:

1. Don't confuse standardized work with work standards.
2. Don't confuse standardization with commonization.
3. Don't try to impose standardized work without also providing a structured improvement process, a clearly defined, unambiguous means of making improvements (kaizen).
4. Practice, practice, practice...
5. Don't forget the critical role of the leader/manager.

Five Neglected Aspects of Standardized work

1. Don't confuse standardized work with work standards

As a practical matter of getting started with standardized work, you have to first clarify your work standards. Never confuse work standards with standardized work. Other terminology often used for "work standards" include quality standards, specifications, engineering specifications, or quality specifications.

Work standards are established during product and process development. They comprise the work that must be accomplished for the product to be produced in a way that successfully achieves the design intent of the product or service. Changes in the work standards requires review of the engineering design, so manufacturing companies usually have some kind of "Engineering Change Request" process in place (and, by the way, it's also a process that is often full of problems and waste and a good process to choose for one of your first efforts at business process kaizen). As part of standardized work, Toyota usually calls them out as “Quality Standards.”

Some examples include:
- Assembly - apply xx pounds of torque
- Processing - heat treat at xxx degrees for x hours
- Healthcare - provide xx medication at xx dose
- Coffee - xx seconds for an espresso shot
- Journalism - a weekly column of xxx words

For each of the above, kaizen (improvement) is also possible, but through a different process than the typically incremental improvements of standardized work and a suggestion system.

Those are work standards.

Toyota-style standardized work for the front-line production operator is a matter of three basic elements: (1) timing, (2) sequence, and (3) a standard amount of stuff that is in process at any given time.

A. Takt time and cycle time (TT vs. C/T)
   - In other words, timing - the timing demanded by the customer and the timing constraints of processing capability
B. Sequence (including layout and man-machine combination with process capacity sheets and SW combination table)
   - In other words, determining the optimum sequence of producing the product or service – first do A then B then C
C. S-WIP
   - In other words, the amount of in-process "stuff" that is required, no more, no less. That stuff may be material, parts, information.

With those standards established, the operator has the basic elements to make it possible (with training, practice, and support) to complete his or her work successfully. From there, he can easily learn to identify problems. And from there – with proper training and support – she can solve problems and make improvements. With the standardized work in place, now the operator can do PDCA.

Toyota's "Mr. Standardized work," Mr. Isao Kato, has hammered this point for many years: "Before you can begin with standardized work, you must clarify your work standards." Too often, this edict has fallen on deaf or not-ready-to-listen ears. This distinction is fully institutionalized in Toyota production operations, so Toyota operations people hardly even need to concern themselves with it. At your company, you will probably need to do a lot of detailed work to make the distinctions clear and you may need to add "required output" to the list for a fourth basic element.

2. Don't confuse standardization with commonization.

Standardization means a given operation has established a standard practice, a routine that can be followed, a baseline of comparison for the human doing the work to use to discern normal from abnormal. With that baseline, a foundation for PDCA is established, making improvement possible.

Commonization, on the other hand, means simply that a given operation is done the same way everywhere. This is where concern with "best practice" and seeking "one best way" comes in. Toyota refers to it as yokoten. For example, an assembly job that entails bolting in a seat belt or the process for communicating a scheduling change in a dentist office – commonization is doing those jobs exactly the same in every location by every worker. (See "Teachable Moment" column.)

Our aim with standardized work is the former, establishment of a baseline of operation from which improvement is possible. There are of course many occasions when commonization is also desirable. But, the real prize here is when we can get each person to follow his or her own SW so that every time they do the job they do it in the same way, establishing a baseline that can then be observed for correctness, abnormalities easily identified, and improvements readily generated.

As a leader, if you can achieve this in all your operations, you should be very happy. Then, you may wish to also pursue commonization as needed. But, my wager is that once you have each worker engaged in pursuing improvements in his or her own SW, you will find your dissatisfaction that different workers may do similar jobs a little differently to be much less of a concern.

Many companies allow this concern to become an excuse to not turn their employees loose with kaizen, to not charge them with making suggestions to improve their own work. Such managers choose instead to worry about keeping track of and communicating "best practice."
My bet is that if you do unleash the creativity of your people, you will quickly stop worrying about the fact that worker A in plant B may perform the operation a little less efficiently than worker B in plant A.

3. Don't try to impose standardized work without also providing a structured improvement process, a clearly defined, unambiguous means of making improvements (kaizen).

You will have none or limited success with standardized work unless you also institute some kind of suggestion system, or process (whether or not labeled formally as a “suggestion system”) that gives individuals doing the standardized work a way to make suggestions in how to improve the work – AKA kaizen. The essence of kaizen comes down to the people who do the work making suggestions in how to improve it. In other words,
You can't do standardized work without kaizen.

And you can’t do kaizen without standardized work.

What is standardized work? What is kaizen?
They are two sides of the same coin - if you try to have one without the other, you will encounter one of two types of very serious problems. To explain and explore:

A. Standardized work without kaizen

- Employee motivation is killed, human creativity wasted
- Problems repeat, unidentified, unsolved, unabated
- Employees don’t take initiative, improvement stops

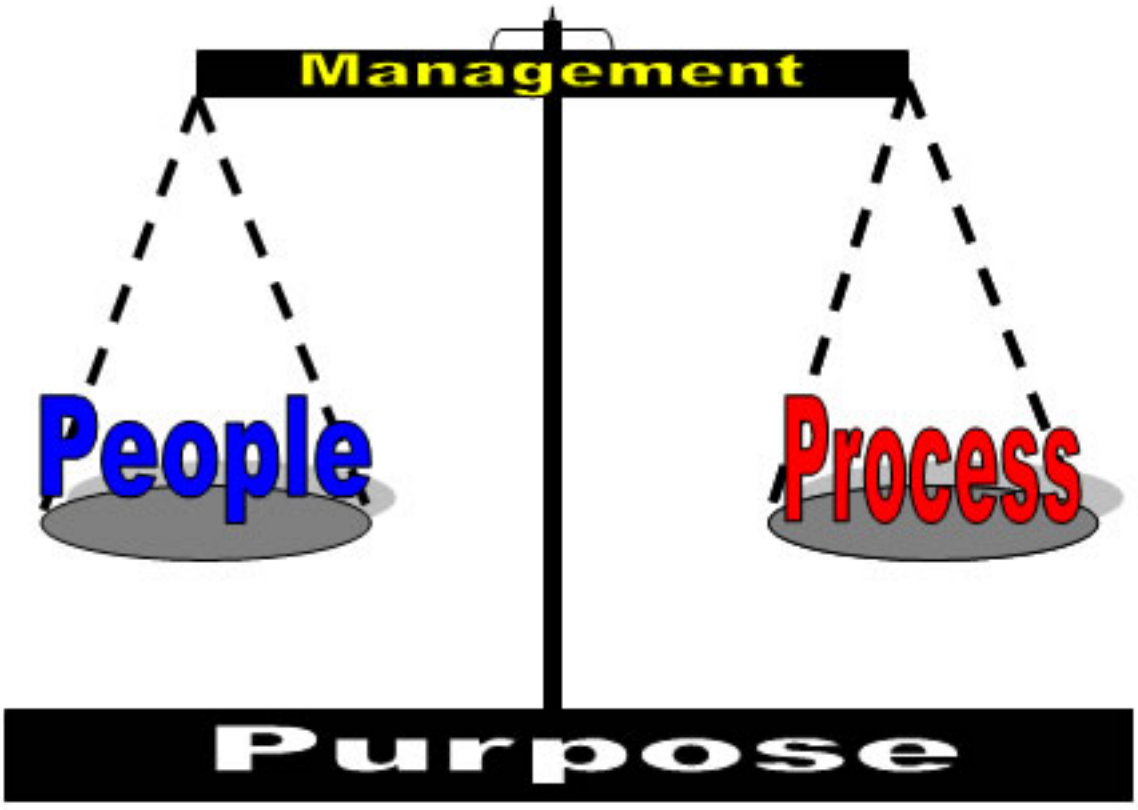
Operations – like economies, like companies, like cultures, like species – either progress or decline.

B. Kaizen without standardized work

- Chaotic change, the saw-tooth effect of progress and regress
- Problems repeat, PDCA not followed, no root cause analysis
- Progress impossible to identify, Improvement stops

kaizen – as an expression of the scientific method - requires a baseline of comparison.

Which brings us back again to the thesis I've been hammering in this space for months, that the technical/process side and the socio/people sides of the equation are equally important. Separate them and expect to find trouble.



4. Practice, practice, practice…

For some reason, most of the time most of us come to see our day-to-day Work as mundane. I guess it's because we do it every day.

But, is that necessary? Craftsmen do their Work every day. Artists paint or sculpt every day. Athletes run or swim every day. Musicians play every day. But we choose to put our daily in a different, lesser, category. The focus that lean thinking puts on frontline Work changes our attitude toward Work. It elevates it, to higher level of visibility and importance. In my recent column about Starbucks, I suggested "…think of the best bartender or waiter/waitress you've ever seen. Remember marveling at how he or she could handle orders coming from all directions, without missing a beat."

Mastery of any skill requires diligent practice. When I was there, Toyota typically followed a sequence whereby workers would first master one job, then move to the preceding and following jobs, eventually mastering each job of the team. When I was at the Takaoka Plant, the process of learning each of the five or so jobs in a team took several years.
In the book Outliers, author Malcolm Gladwell explains that there is great evidence to support the argument that mastery of any skill requires about 10,000 hours of practice. Musicians, athletes, craftsmen, artists, professionals of any discipline can all be observed as requiring this 10,000 hours hurdle. Gladwell provides several examples that reminded me of some of my own favorites:

- Tiger Woods, working with a coach to re-build his swing from the ground up following his first Master's win, possibly the greatest victory ever in golf.
- Michael Jordan may have been about the most talented player of all time, but every observer and Michael himself emphasizes that the real distinguishing factor was that he practiced harder than anyone else and was the most prepared.
- Sonny Rollins, after (that would be AFTER) achieving stardom as one of the very top saxophone players in the jazz world, took three years off to take his playing to a new level. Practicing alone every day on the Williamsburg Bridge in New York City, he blended his notes with the passing traffic so no one heard his new sound until he felt it was ready. His song and album "The Bridge" were instant classics.

There is a saying in Japanese, "Three years on a rock," meaning that it takes about three years to deeply learn any subject of substance.

- When I was at Toyota, there was a saying that one could understand the basic concepts of TPS in three hours, learn to "explain" the basic concepts of TPS in three days, and be proficient in "actualizing the concepts" of TPS in three years.

- In the engineering and R&D world of Toyota (quite independent from the rest of the company, with even its own separate Human Resource Development Department!), it was commonly stated that, "it takes 10 years to make an engineer."
- For quick reference, Gladwell's 10,000 hours would ordinarily translate into about four years of essentially full-time effort, or longer if pursued at a more leisurely pace.

Of course, the specific numbers that Toyota (or Malcolm Gladwell) puts on these things is interesting but not exactly the point. The point is … what do you think?

-›What is the fundamental thinking regarding skill development that informs your organization's approach, system, and methods of developing your people??
(Toyota's training, especially for employees who Work on or around the front lines, is heavily informed by the Training Within Industry (TWI) program they learned from the U.S.A. following the Second World War. A little more on TWI in the next section, but if you don't know about TWI, learn it!)

5. Don't forget the critical role of the leader/manager

When I encounter managers struggling with getting standardized Work firmly established, their questions and concerns always center around the worker, around how to get the worker to follow the standardized Work. Usually, however, bigger problems are always found well before getting to the worker, often beginning with the role of the leader, especially the immediate front-line supervisor.

The front-line supervisor won't change his or her behavior from compliance officer to support for success unless (1) the new expectations are made clear, (2) the requisite training is provided, and - last but not least - (3) time allocation is provided. What that adds up to, of course, is standardized Work for the supervisor.

My first encounter with SW was in January 1984 at Toyota's Takaoka Plant. I was fortunate to be provided the experience of six learning-packed weeks working production jobs in the each of the major auto processes: stamping - body welding - paint - final assembly (followed by time in the production control office learning kanban calculations, observing training, and learning other similar support operations). All my leader/mentors were outstanding, patiently (mostly patient) teaching me each job. It was in final assembly that I had my most intense experience with standardized Work and the role of the team leader.

I was too tall for the job I was assigned on Toyota's Corolla assembly line. I'm six feet tall and Toyota's guidelines in Japan would ordinarily have placed me in other jobs rather than getting in and out of a Corolla 500 times a day. But, an exception was made in my case since I was to

perform that particular job for only one week and the job was one that was being readied for trainees from NUMMI who would begin arriving a few months later.

In addition to being relatively tall, my legs are long for my height. So, I found it hard to do the job exactly as instructed, which was to enter and exit the vehicle in the highly specified proven, safe, and effective manner - butt first. So, I quickly found my workaround, which was to enter right leg first. Entering right-leg first was no problem in and of itself, but it meant that my legs would get stuck in an awkward position. It seemed okay to me, and was "easier" or preferable to me than doing it the prescribed way. (This all falls under the heading of "knack." When Toyota teaches standardized Work, in addition to stipulating the sequence of Work elements - as noted previously under the three elements of SW - the individual elements of Work are taught using the TWI Job Instruction methodology in which many elements of the job require a certain "knack" to accomplish satisfactorily. People generally assume "knack" to be an individual thing, not to be specified. But, the TWI and SW approach stresses that "knack" can and should be standardized, and can therefore be improved.)

My team leader observed what I was doing. He watched for awhile, his brow steadily furrowed, and soon asked me why I couldn't do it as I had been instructed. I explained that it was easier for me to do it my way. He listened, unconvinced, and observed me awhile longer. He asked me to try it the "right" way again, explaining that he was fearful that I would hurt myself if I kept up with my improvised repetitive motion over and over day after day. Perhaps My Way seemed easier to me at the time, but the position I was maintaining to do the Work would surely cause strain which would injure me over time. I complied with his instructions and tried again doing the job the standard way, but, sure enough found it very hard to perform the Work that way. So, I explained that I would really have to go back to doing it My Way. He said, okay for now, again clearly unconvinced, with concern on his face, and again stood there observing me as I did the job.

Then, as I did the job and he observed, I began to feel his observation and my awkward Work slowly attract a crowd. Before long, the group leader (my team leader's boss), some adjacent team leaders, and others I didn't know where all standing there, watching me Work. I didn't have time to worry much about it. My takt time and cycle times were about 56 seconds (on average, vehicles would pass through that had different option content, so some would require well over 56 seconds, some less - the vehicles were arranged in a sequence - a heijunka sequence - that assured that two high-content vehicles never succeeded each other, there would always be a lower content vehicle that required less time in between) and I usually had no extra time to chat or divert my attention as I did my job.

Then I noticed that the group of observers huddled, akin to an American football huddle, engaged in intense discussion. Then, as they broke their huddle, my team leader tapped me on the shoulder, instructed me to step aside, and took over my job. He and the others had come up with a NEW way to do the job, neither the original SW way nor my improvised method, which they all agreed was going to injure me if I kept it up. My team leader tried out the new procedure, as I now joined all the others in observing. When the New Method seemed to Work to his and the others' satisfaction (many heads nodding approval, but still many furrowed brows as well - this was important stuff), he asked me what I thought. I gave his suggestion a try. Sure enough, the new procedure worked for me, and to the satisfaction of the impromptu task force.

The other observers had included, I discovered later, a safety specialist.
So, safety comes first, and there are aspects to the design of successful Work that don't necessarily appear on the various standardized Work worksheets. Simply, the team leader (front line supervisor) must understand the Work, deeply. Most importantly, first we are going to observe the Work closely, ensure it for safety and effectiveness. Then, we'll Work on efficiencies, improvements, and other problem solving. And, beginning to end, we are going to ... observe the Work ... very ... closely.

More on leaders ...
I've been discussing here the key role of the front- line supervisor, but there is a role here for senior leadership as well. Too often, SW is viewed as one of those mundane things that are taken for granted. People assume that SW is working and if it isn't, well, people should just do their jobs better.

But, everyone has a role to play here. Engineering needs to design Work that is easy to perform in a standard way, and easy to improve. Middle management needs to support the front-line supervisor so that he or she has the TIME available that is necessary to support the workers.

When I worked at the Corolla plant in Toyota City, roughly half of the team leader's time was made available to help his team members when they got into trouble. And he had only five or so workers to support. So, here is where you should be asking yourself here, "Do we make that kind of support available to our workers ... ?" As I visit companies, it is very rare that I see this kind of commitment to support the frontline supervisor in supporting the worker.

Senior managers need to take the time to understand what SW really is and how it is nothing if not a mechanism to enable them to achieve their corporate objectives. At some point every high level objective comes down to a matter of how someone on the front lines performs his or her Work. This is where, as the saying goes, the rubber meets the road. Until it's reflected in someone's standardized Work, any corporate objective or initiative is just talk or words on a piece of paper.
So, we are going to take responsibility to ensure that the worker learns, is supported and given every opportunity to succeed in completing the standardized Work EVERY time he or she performs the Work. Providing that support is the role of the leader: Much less policing of compliance to enforce SW; much more support to enable success.

Standardizing non-standard Work
Now that we've established a baseline understanding of basic, Toyota-style, standardized Work for production workers, what about standardized Work for non-standard Work??
This topic is less a matter of a "here's how Toyota does it" and more of a question to explore together. I think of SW in three levels (this is similar but different to the Toyota view):

A. Level 1 - repetitive production-type Work
   - This is what we've been exploring in this column
B. Level 2 – supporting repetitive Work
   - I discussed this briefly in Neglected Aspect Number Five – the role of the leader.
C. Level 3 – knowledge-based or service or project-based Work
   - Even for those kinds of Work, success is still a matter of
   - Timing
   - Sequence and content (including "knack")
   - How much "stuff" we need to complete the Work
   - Output
   - SW/kaizen versus creative or knowledge Work

Standardized Work is ALL about PDCA, establishing conditions in which PDCA is possible, and then carrying out structured learning and improvement cycles. That is called science, the scientific method. Do we think science isn't creative? Hah – perhaps it often isn't, but it should be!

So what…

What shall we make of this discussion of standardized Work? Two motivations drove me to write a bit extensively about standardized Work. First, SW, that most basic of building blocks for any lean system, remains woefully misunderstood, misapplied and often disregarded. I think one reason for it being neglected relates to my second motivation.

I want to emphasize that well-designed standardized Work will recognize all the social factors that go into producing good quality in a repeatable way. Poor design of the Work could easily have led to the mistake by the worker and the subsequent quality failure. The Work design must produce the required output, as defined by the technical requirements, the specifications, and as specified by the engineering design of the product. That comes first. But, the Work design must also include the "human factors" considerations that make it possible to do the job the right way, and even difficult to do it the wrong way.
Which brings us back to the thesis that the technical/process side and the socio/people sides of the equation are equally important. At the end of the day, you can't really separate them.

Look at your standardized Work and structured improvement process (kaizen) - that is where you will find your culture!

Simple Outline for the Purpose, Process, and People of Standardized Work

In the last two columns, I introduced five neglected aspects of standardized Work. Several people quickly requested a column on what, exactly, SW is. Here's a quick introductory outline, following LEI's Three P framework of Purpose, Process, and People. Incorporate these things when setting about to establish standardized Work.

Purpose

1. Baseline for improvement.
2. Means of realizing attainment of org goals at the frontlines, where the real Work of the organization takes place.
3. Means of engaging the people who do the Work.

In other words, remember what you want it for:

1. Commitment not compliance
2. Improvement not steady state
   - There is no steady state!
3. Creativity, innovation, problem-solving, improvement not following the rules
4. Initiative not following orders

Process

1. Work standards
2. Safety, quality, performance
3. Observation and Process study

4. Three Basic Elements of SW
   A. Takt Time and cycle time (TT vs. C/T)
      - In other words, timing - the timing demanded by the customer and the timing constraints of processing capability
   B. Sequence (including layout and man-machine combination (with Process capacity sheets and SW combination table)
      - In other words, determining the optimum sequence of producing the product or service - first do A then B then C.
   C. S-WIP
      - In other words, the amount of in-Process "stuff" that is required, no more, no less. That stuff may be material, parts, information.
5. Standard Process for making changes (i.e. Suggestion System)

People

1. Means of engagement, involvement, ownership
2. Each worker as entrepreneur
3. QC and SS
4. Trained
   A. TWI - Training Within Industry
      - If you don't know about this program, learn about it.
      - Job Instruction, Job Methods, Job Relations(In Toyota's case, standardized Work and kaizen training has replaced JM, but companies would be well-advised to consider starting with JM, then consider Toyota-style SW later)
   B. Skills Matrix
   C. A plan for every person!
   D. Practice, practice, practice
5. SW for non-standard Work
   A. Three levels of SW
      - Level 1 - repetitive production-type Work
      - Level 2 - supporting repetitive Work
      - Level 3 - knowledge-based or project-based Work
   B. SW kaizen versus creative or knowledge Work
      - PDCA (Lean Product and Process Development by Al Ward)
6. Coaching, questioning (right questions), not telling, make people think and take responsibility
7. Assign greater and greater responsibility

And remember: The technical/Process side and the socio/people sides of the standardized Work equation are equally important. Well-designed standardized Work represents the technical

and human dimensions of Work in equal measure. The example of assembly line standardized Work from kaizen Express is a perfect illustration: