

JANUARY 2009

TEXTILE RENTAL

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Hands-On Conservation

LaundryESP® Progress Report
Summit: Down-Market Opportunities
Process-Improvement Strategy & Tactics
Fine-Tuning the Finishing Dept.
Savings Case Studies: Gas, Water, Utilities
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Upgrade and Save!

A dedicated focus on keeping your plant 'healthy' can fuel ROI and boost profitability



Packerland Rent-A-Mat, shown above, achieved \$56,000 yearly savings by implementing a process-improvement effort that enhanced dryer throughput.



Shown above is the old dryer duct system with twists and turns that produced back pressure and slowed drying times.

By Ed Kwasnick

What is 'Process Improvement'? I'm sure most of you have heard this phrase before. It's a very common term in my line of work, and I catch myself using it daily when talking to clients, co-workers, friends—even strangers. In fact, I've used it so many times over the years that I forget to explain what it is. So, what does "process improvement" really mean?

Let's start with the basics. According to Webster's Dictionary, a process is "a series of actions or operations," and an improvement

is "something that enhances value." So, when we combine these two definitions we get:

Process + Improvement = Enhancing the value of a series of actions or operations.

This general definition applies to any process, from washing textiles in a laundry to washing your car in the driveway. Here is an example of a simple process improvement that we can all relate to. I like to begin my day with a hot shower. And for years I used a proven system that got the job done. The first step was a quick rinse. Then I would wash my hair, rinse completely, and repeat the process, just like it says on the shampoo bottle. The final step was a complete body wash and final rinse. In laundry terms, that's one wet down, three suds and three rinses. This process usually took about 12 - 15 minutes and I followed it for years. One day, my wife said, "Why does it take you so long to shower?" To her credit, she can get in and out in about 5 minutes. So, with great pride, I described my very thorough showering process. When I was done, she said, "First of all, you only need to wash your hair once. The second time doesn't do much. And, instead of washing and rinsing three times, just shampoo your hair, soap up, and do one rinse at the end. You will use less shampoo, less hot water, less electricity, and be just as clean. And you'll have more time to spend with the kids at breakfast." She was right on target! I can't quite get in and out in 5 minutes like she does. However, I do conserve water, electricity and shampoo. And, most importantly, I get additional time with my

children every morning, which makes this process improvement extremely valuable.

Change is *not* good

For years I've heard people say, "Change is good." Well, I'm going to swim against the current of conventional wisdom on this one. In the process-improvement world, change is not good. Let me repeat



Another view of old duct system. Long runs like these reduced efficiency in the dryers.

that. *Change is not good.* In fact, change can be detrimental if implemented in a careless or haphazard manner. So, change standing on its own is not enough. You need to have a measurable benefit that occurs due to change. That is called improvement.

Change + Benefit = Improvement

In the process-improvement world, you do not change anything—you continuously improve everything. Many years ago there was a television commercial for a chemical company called BASF. Their tag line was "We don't make a lot of the products you buy. We make a lot of the products you buy better. ®" That is the ultimate goal of process improvement—change the process to make it better.

The view from 30,000 feet

So, you want to improve your production processes, but you don't know where to start. The first thing you should do is view your operation from "30,000 feet." Get out of the plant and climb to the top of the tallest mountain. Now take a long look. What do you see? Your plant is a complex, living, breathing organism made up of thousands of little parts that constantly work in concert with each other. In this way it's very similar to the human body. Let's pretend you don't feel well, so you schedule an appointment with your doctor. When you arrive, the first thing she does is start asking you "big picture" questions. What are your symptoms? When did you start feeling bad? Are you on any medication? She takes your temperature and blood pressure. She starts with a medical history and then

drills down into the details. How successful would she be if she took a blood sample and spent the rest of the day studying it under a microscope? She probably wouldn't be able to help you.

The same thing applies to improving your production processes. Start with the big picture. Here are some "high altitude" questions you should use to get started:

1. What is my revenue per pound?
2. What is my PPOH (pounds per operator hour)?
3. What are my labor costs (% of revenue and per cwt)?
4. What are my inventory costs (% of revenue and per cwt)?
5. What is my natural gas usage (Btu per lb. or lbs. per MCF)?
6. What is my water usage (gallons per lb.)?
7. What is my electrical usage (kWh per lb.)?

Once you answer these questions, you can compare your numbers against other operations and see where you stand. But whom do you use as a benchmark? Should you measure yourself against the industry average? The answer is "yes" if you want to be average. However, most of us don't want to be average. So, if you want to outshine your competition, you need to compare yourself against the best in the industry. There are many ways to do this. You can join a management group, reach out to an industry association, enlist the help of a consultant, or talk to your favorite equipment supplier. Just make sure you are benchmarking against the best.

Be honest with yourself

You've just completed the benchmarking process. Now it's time to sit down and ask yourself the following question: Where can I improve my operation? At his point, the answer is really quite simple. If your production numbers are lower than your benchmarks, you have room for improvement—period, end of story. I don't want to hear any excuses or whining. This is great news! You now have an opportunity to reduce operating hours, decrease FTEs, or increase throughput, all of which will have a major positive impact on profitability. If your plant was perfect, your improvement elevator would only go in one direction—down. Personally, I would rather work every day to get better than try to prevent myself from getting worse.

Bottom line

Once you identify your opportunities for improvement, you need to define their impact in dollars. Money is the only common language among plant managers, general managers, owners, and accountants. If I told you that placing RFID chips in your mats would increase throughput, reduce labor, and improve inventory utilization, you might be mildly interested. However, if I said that putting RFID chips in your mats would save \$100,000 this year, next year, and every year after that. ... I now have your full attention.

So, how do you measure the impact of an improvement on your bottom line? Here's a quick example. Let's say you operate a healthcare plant and your current PPOH is 100. Based on your benchmarking research, the best operators in the industry are getting 140. If you were to magically increase your PPOH from 100 to 140, what would be the impact? How many operating hours would you

Plant Efficiency



By installing a duct system with an outlet that went straight to the roof, Packerland enabled its dryers to ‘breathe.’

eliminate? What would be the savings in utility and labor costs? I am constantly amazed at how a small improvement in PPOH can have a huge financial impact. Remember, every dollar you save in the plant goes directly to the bottom line. So, if your company is making 10% profit, \$100,000 in plant savings is equivalent to \$1 million in new sales. *That’s right, \$1 million in new sales.* Wow, I would love to write-up a \$1 million in new sales. What about you?

Stop talking and start improving

You’ve identified your opportunities for improvement and calculated the financial impact. Now it’s time to stop talking and start improving. This is both the most important and most difficult stage of any process improvement project. You’ve done your homework. Now it’s time to take action. And this is the part that can cause fear and, perhaps, even complacency. What if I make changes and things don’t improve? What if I get approval to do the project and it doesn’t work? Doubt begins to creep in. Suddenly not doing anything sounds like a pretty good option. As the old proverb states “Better the devil you know than the devil you don’t.” And so your great idea dies before it sees the light of day.

I’ve seen another scenario that keeps great ideas on somebody’s desk instead of being implemented on the plant floor. Day-to-day plant operations can be so frantic and frenzied that the production team doesn’t have time to improve. I’ve heard managers say something to this affect “There are just so many hours in a day. It’s tough enough to get the work done without having to implement some new idea or process. If I had more time, then I would make some changes.” Here is one of my favorite analogies. It really demonstrates the irony of this statement. A plant manager comes running out of his office with his hair on fire. He begins to frantically look for a way to put out the flames. You walk up to him with a hose and say, “Here, turn this valve and press this lever while aiming the nozzle at your head and you can put out that fire.” The plant manager looks at you wild-eyed and shouts, “I don’t have time for this! Can’t you see my hair is on fire?” You will never have time to improve your current situation unless you implement changes that *get you out of your current situation.* You have to embrace the idea of continuous improvement and then make time to do it. Once the initial improvements take hold, you’ll have time to breathe and life will get easier. It’s a self-perpetuating process. But it takes effort, determination, and planning. In the words of Thomas Alva Edison,

“Opportunity is missed by most people because it is dressed in overalls and looks like work.”

Closing the loop

I once worked for a general manager who preached the benefits of what he called “closing the loop.” During our Monday morning staff meetings, we would discuss the major challenges from the week before. I remember during our first meeting, the service manager said, “Route 1 was shorted mats two days in a row last week. We had to make special runs to each customer to deliver their mats.” My GM looked at me and asked, “What happened and what are we doing about it?” I explained that we had a new employee in the mat department and that he hadn’t received adequate oversight to make sure he was doing the job properly. To make sure this didn’t happen again, a plant supervisor would be checking every mat load to ensure they were complete. Most GM’s would have said “Great, let’s move to the next item,” but not this guy. He turned to the service manager and said, “So, did you close the loop with Route 1?” The service manager said, “Huh? What do you mean by close the loop? It’s been fixed, right?” And I still remember his response to this day. The GM said, “Just because you handed off the issue to Ed, doesn’t mean you are no longer responsible for the outcome. Communicate to Route 1 what we are doing to fix the problem. Have him talk to the stops that were affected. And above all, make sure you check in with Route 1 this week to see if he is happy with the solution. The service reps need to know you’re in their corner. You need to close the loop.”

I have taken that lesson to heart, and so should you. The most important phase of any process-improvement initiative is closing the loop, and it starts and ends with the same question: Did the process improvement have the impact you were looking for? If so, then beautiful! Job well done, time to celebrate. If the project did not have the impact you were expecting, then how close did you get? What kept you from hitting the goal? What can you do to improve the results?

If you don’t hit the bull’s-eye on your first throw, that’s OK. You still get points for being on the board. Now, readjust your aim and try again. What amazes me is how many people throw a dart and then don’t even look to see where it hit. Earlier, I mentioned how putting RFID chips in mats could lead to \$100,000 in annual savings. Let’s pretend that you decide to move forward with the project. You purchase the chips and put them in the mats. You buy the tracking system and modify your current mat department processes and procedures. You train your employees how to use the new system. After a couple of months, it’s running just like you had envisioned. Your labor and inventory costs start to go down. Man, this is great! A year later you run into me at an association meeting. I ask you, “How’s the new mat RFID system?” You say, “Fantastic! My people love it and it gives us better accountability with our customers.” And now I drop the bomb, “Did you save the \$100,000?” There is a long, uncomfortable pause followed by, “I don’t really know. I think so. I know our labor and inventory costs dropped the first three months after we got it up and running. I’m sure it has more than paid for itself by now.” Ah, but you can’t be sure that it has paid for itself because you don’t know. What if something

changed? What if the plant went back to doing it the old way? You have to measure the final results. Just because you implemented the process improvement, doesn’t mean you are no longer responsible for the final outcome. You have to close the loop.

Process-improvement Case Study - Packerland Rent-a-Mat, Milwaukee

I know what you’re thinking. All of these ideas sound great on paper. Now, show me a real project with real results. OK let me introduce you to Packerland Rent-a-Mat, a client that Turn-Key has worked with for the past 18 months. For those of you not familiar with Packerland, they are a dust control company that specializes in renting mats, mops, towels and similar products. Their largest plant is in Milwaukee. It’s approximately 40,000 square feet and uses an automated washer/extractor system, an automated tunnel washer system, and miscellaneous small washers and dryers. Needless to say, the plant can pump out a lot of mats. Mike Shultz, president and owner, is very hands-on and runs one of the most efficient dust operations in the country. But what makes Mike and his organization truly remarkable is their commitment to continuous improvement. They know they run a great operation, but constantly strive to make it better.

In December 2007, Packerland partnered with Turn-Key to do a detailed process-improvement study. The initial phase of the work consisted of a 3-day on-site review of the entire laundry operation, including the production and utility processes. We started at “30,000 feet” reviewing metrics such as PPOH, revenue per pound, labor costs, inventory costs and utility consumption. Every time we found a potential improvement opportunity, we would dig into the details of the operation and determine if it was legitimate. After three days, we identified 15 process improvements. Four of them were safety related. The remaining enhancements would provide a combined savings in excess of \$150,000 annually.

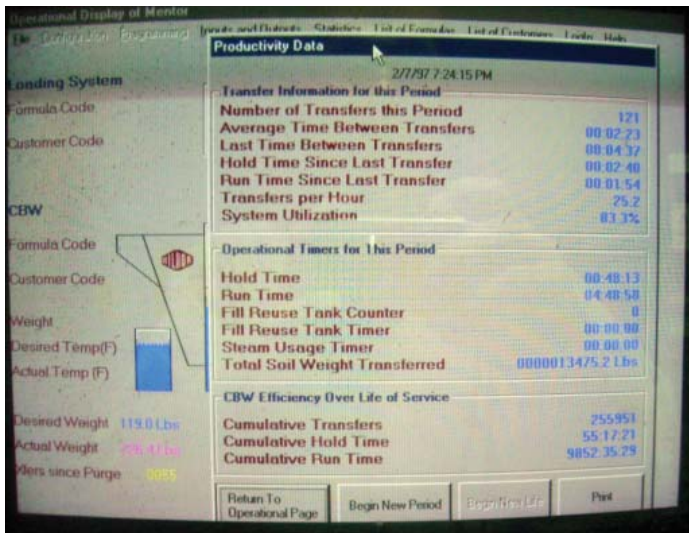
After doing the initial analysis, it became clear that certain improvements should move to the top of the list. For example, increasing tunnel washer uptime had a lot of bang for the buck. The tunnel was currently operating at 83% uptime (see photo). Experience told us that uptime should be in the low to mid 90s. So, we established a goal of 95% and calculated the financial impact. A 12% increase in uptime would lead to four fewer operating hours per week. This small improvement equated to an estimated \$39,800 in annual savings.

Now we needed to identify how to increase the tunnel uptime from 83% to 95%. It was obvious that the tunnel was going to hold due to a lack of drying capacity. If we could increase dryer throughput, we could cut tunnel hold time. So we discussed the following options:

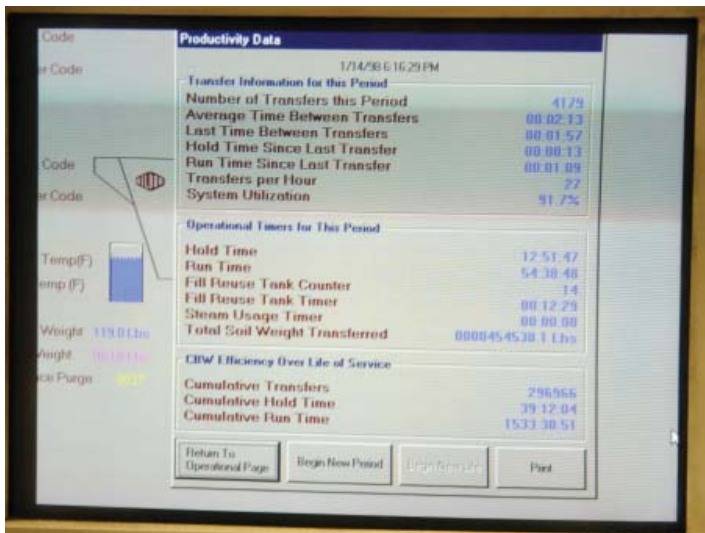
- Change the dryer exhausts to reduce back pressure
- Increase extraction time
- Reduce dry times
- Increase dryer temperatures
- Add more dryers

The most cost-effective solution was to improve dryer efficiency and increase throughput. This would eliminate the bottleneck.

Plant Efficiency



The chart above shows tunnel uptime system at 83.3% before Packerland adjusted drying times/temperatures.



The chart in this photo shows a 92% system utilization that resulted from increasing drying temperatures to speed up the process.

However, Packerland was not willing to sacrifice the quality of the end product. They made it very clear that wet mats were unacceptable.

So, we decided to attack the first four bulleted items. The dryer exhaust ducts used long runs with complicated jogs and turns (see photo). This caused unnecessary back pressure on the dryers, which meant longer than normal dry times. To eliminate this back pressure, Packerland installed new ducting from the dryer outlet straight through the roof (see photos). This eliminated 70 - 80% of the original ducting. Now the dryers could “breathe.”

Next, we increased extraction time from 3.25 to 5.5 minutes to sling a little more water out of the mats. Then we reduced the dry times by two minutes. The mats came out bone dry. Then we reduced the dry times by another two minutes. This time the mats came out wet. So, the increase in extraction time reduced water retention, but only enough to decrease the dry times by two minutes. This really didn’t help our situation.

Fine-tuning the experiment

So, we looked at the dryer temperatures to see if there was room for improvement. The inlet temperature was set at 375° F and the outlet at 165° F. When the dryer would start, the burner would go to high fire and the inlet temperature would jump to 375° F. However, within a minute or two, the outlet temperature would reach 165° F, and the burner would modulate down to maintain the outlet set point. This caused the inlet temperature to drop to about 100° F and stay there for the remainder of the cycle. This is the equivalent to my wife drying her hair with the blow dryer on “low.” She can do it, but it takes a lot longer. To minimize drying time, you need to hit the load with maximum heat and evaporate as much water as possible in the shortest amount of time. Then, as the load begins to dry, you back down the heat so that you don’t damage the goods. After some discussion, we decided to increase the outlet temperature set point to 180° F. This allowed us to keep maximum heat on the mats for a longer period of time without causing any damage.

Once this change was made, we reduced dry times in two-minute increments, checking the quality of each load along the way. Ultimately, we reduced mat dry times from 18 minutes (14 + 4 cool down) to 12 minutes (8 + 4 cool down.) That is a 33% decrease in dryer cycle time and a 30%-35% reduction in dryer natural gas usage. The increase in dryer throughput improved tunnel uptime to 92% (see photo). That doesn’t sound like much. In fact, it’s only a 9% increase. But that small improvement in uptime (9%) that was caused by a minor increase in outlet temperature (15° F) saved Packerland some big money—about \$56,000 annually.

Don't just survive, thrive

It’s amazing how small improvements can add up to big savings. But what’s even more amazing is how many companies don’t embrace process improvement as an important part of their corporate strategy. Open up the *Wall Street Journal* and you’ll see a long list of companies—GM, Circuit City, DHL to name a few—that have never looked in the mirror and said “I’m good, but how can I be better?” As I wrote this article, the Dow Jones hit its lowest point since the credit crisis. These are tumultuous times, and companies that continue to improve will not only survive, they’ll thrive.

Just remember that continuous improvement is a road that has no end—no matter how good you are, you can always be better. And, improvements don’t have to be extravagant or complicated. Many times it’s the small enhancements that yield the greatest results.

I leave you with these words of wisdom spoken by my 4-year old



daughter as she poured syrup on her pancakes: “You know what, Daddy? A little is a lot when it’s in the right spot.” What great advice! TR

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