Change the Game

How the Drive to Make the Month Impacts Lean Transformation and What We Can Do About It.

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How many of you out there are frustrated with your lean transformation results? The company paid for you to get an outstanding lean manufacturing education. You learned the importance of takt time, level loading, flow and pull. You learned how to perform cell design and even how to perform a lean transformation for an entire line or facility. You even got involved in a lean transformation project to convert a production area to a takt based production line that contained single or multiple part families. You created the level loaded schedule, ensured that at least one month of inventory was available in advance of start and ensured that the pipeline was full with active purchase orders and responsive suppliers. The line flowed perfectly for one month, maybe two, but when you checked the inventory, you found it was depleted much further than you had anticipated for and now there are late hardware issues, that will impact the productivity, revenue and on-time delivery you were trying in earnest to improve. You performed root cause analysis to find out why there wasn't enough inventory and found that more finished products were shipped than were originally planned, explaining the depleted inventory. You then energized your team to get the hardware back in stock and just when you think you got everything in order and fixed the problem, after running well for a solid month, the bottom fell out again the following month. The transformation itself was blamed as the problem or failure. The frustrated production managers abandoned the transformation by reverting back to the prior way of production. Productivity and on-time delivery admittedly did get back to

where it was prior to the lean transformation, so the blame was placed entirely on the lean activity. The lean activity was halted and all that was achieved after all of that investment and effort was a return to the status quo. The following comments were probably heard; "Lean doesn't apply here". "We already know what we are doing, please just leave us alone."

Well, those comments aren't wrong. No matter how hard the transformation team tries, they cannot overcome this hurdle easily. It has nothing to do with the effectiveness of lean transformation, the culture, the management or the employees.

It has everything to do with the way the business is driven and the resulting management behavior required to support it. Most if not all businesses are driven by monthly and quarterly financial expectations. The financial metrics are calculated and reported every month. The finance team is relatively quiet for the first two weeks of the month, but by the time week 3 rolls around, if the run rate for the financials is not on track, there will be several meetings held with the management team on how the month's run rate is being missed and what can be done to get it back on track. The agenda of the executives, the finance team and the production team will be to figure out how to make the month. If it's a publicly traded company, commitments have been made to the CEO, the board and the shareholders on what the quarterly results would look like and it is their expectations that need to be satisfied first and foremost. It goes far beyond whether or not a particular manager's performance bonus is being missed. It is a miss that can actually get a manager fired. The miss doesn't even need to happen in the area that the transformation took place. A revenue miss can occur on another line that falls under the same management team and from a total sales or revenue perspective,

extra production may be mandated in one area to make up for the shortfall of another area.

The lean transformation team can go through a lot of time and effort to get the right product mix in. They can get a mixed model production system fully installed and perfectly sequenced with trained operators and even have a few months inventory in place to ensure consistent level loaded production and flow. The quality can even be at an all-time high, but the moment a top financial or managerial executive is not satisfied with the month's revenue numbers, the "make the month" game will begin. A quick test to perform to see if your company has this issue is easy. Simply plot out a graph of the full factory individual deliveries by week for the prior year as X's in a row. Do you see what visually looks like a repeating hockey stick where the bulk of the deliveries happen in the last week of the month every month? If so, your company is not level loaded and could very well be suffering from this issue.

There are many levers that can be pulled in order to satisfy the financial expectations when things go wrong, all of which, work against the lean transformation initiative.

The following scenario serves as just one of many possible examples:

The commitments for the month started out the right way. The schedule was planned for what products are due for the month and what was on plan to be shipped for the month. The orders were placed on time and the team had the correct amount of skilled individuals to get the job done. Then something went wrong. In this example, we will have product A, that goes into Assembly A received from a supplier with a quality issue found by receiving inspection. The quality department quarantined the entire inventory of the Product A parts and ordered a

production halt on that product to protect the integrity of the assembly and ultimately the customer. The supply chain team joined forces with the quality team to correct things with the supplier in order to get more of Product A in. The production and finance team then asked, "what about the workers we need to keep productive and what about the revenue commitments that need to be met? How do we make the month?"

The production managers already have the answer. They've been through this scenario many times before. Assembly A will be put on workstop and a tactical team will be focused on getting Assembly A running again. Another Assembly that flows really well in the factory and has plenty of inventory on hand will be run instead. Therefore all other resources will behave as business as usual as if the quality issue never happened. The month will be met financially and any extra inventory produced to keep workers productive will be temporarily stored as finished goods until it is needed. The production team may enlist the contracts team to contact the customer to ask them if they will take the extra assembled product early in order to solve the inventory problem.

The metrics for on time delivery will be barely impacted based on the total volume of products that were delivered on time or ahead of schedule, so the problem won't even be visible to upper management at first. Over time, if the quality issues and part shortages continue, the on-time delivery hit will be visible, but by that time, there will be no correlation between the end result and what was changed and hence behaviors will not change.

The revenue gained from running the wrong assembly may even be higher than expected! The product that will be chosen to run will most

likely be a top runner and if the managers are smart, they will have picked one with even better margins and may even be rewarded at bonus time for the increased revenue if that is all they are measured on.

You may be thinking, What's the big deal? We ran the wrong product. So what? It's actually a big problem that will ensure that your company will never achieve sustained operational excellence. When the wrong assembly that wasn't scheduled was run, it not only pulled from the future inventory for that particular assembly, but it could be that assembly was not even required in the next month.

What happens next is a cascading ripple effect. The inventory that was pulled and depleted was actually properly ordered and scheduled to support other assemblies. Now there won't be just one short assembly. There will be MULTIPLE short assemblies that will pop up seemingly from nowhere overnight. In order to replace those assemblies, the buyers and planners will have to schedule a replacement order at leadtime. Which means all of the subsequent assemblies will be late until leadtime has been caught up to again. This cascading effect compounds every time this game is played. Due to the fact that the other assemblies won't show up as late to leadtime right away, when they do suddenly appear, buyers will spend time investigating wondering what went wrong. They did their job. They placed their orders on time. Was MRP wrong? Did MRP change? The buyers will blame MRP, the suppliers will also blame MRP. The blame game will be endless. All of the complaints about MRP will flow up to the executive team who may decide to upgrade the MRP platform based on all of the complaints about it. Further shifting the focus away from the fundamental problem. The fundamental problem is the game of changing the production plan in order to make the month without fully understanding and communicating the repercussions.

Folks that figure it out will complain about it. They will be told that their job is to just focus on supporting the ever changing MRP schedule. Over time, they will either become numb and just do what they are told, considering the ever-changing demand signals as just a normal part of their day or, they will decide to leave to go look for greener and leaner pastures.

So, if making the wrong product to make the month is not the correct answer, what are we to do when we run into a production workstop or a missed revenue opportunity on a sister line? The correct answer is actually simple (though admittedly painful).

STOP THE LINE WHERE THE PROBLEM RESIDES.

Once the line is stopped, all members of the team at all levels need to simultaneously be notified and take immediate action. If the problem cannot be immediately resolved, a cross-functional Sales, Inventory and Operations Planning meeting should immediately convene to discuss how the problem impacts EVERYTHING and collectively decide the best approach to fix the problem for the short term, long term and then how to prevent it from happening again. This is what Toyota does. It's not magic. It is by design. It is why they have one continuous moving line. When the line stops, EVERYONE knows, EVERYONE is affected and EVERYONE needs to immediately get engaged in being part of the solution. Everyone knows their role and what is to be done. The folks who work directly on the line, go into a plan B and C standard work to help perform work in advance of the line moving so that the reduced cycle time will support a faster takt time that they can run the line at temporarily in order to help the line catch up quickly and then return to the proper takt time as quickly as possible. Simultaneously, engineers

deploy to the line to determine the root cause, come up with an interim solution to restart the line and follow up with a permanent solution to ensure it does not recur.

If the company is going to fund a lean transformation but are not prepared to look at production as an overall system and engage all functions as a team working together, it will be a waste of time and money. A company that is not prepared to make this commitment is better off going after small scale, interim gains by conducting cost reduction type events. These will allow the status quo to be followed while making smaller strides towards incorporating lean activity.

When a company embarks upon a transformation of a production line, all executives at all levels need to understand the new and old rules of the game and fully understand and be fully on board with what is at stake. MRP will need to be used only as a forecast and Bill of Material planner, while Kanban is utilized for ordering and execution and timely updating of MRP forecast. Therefore, a site wide consumption/replenishment model must be determined for the company and put in place before the transformation takes place. Extra "flow assurance" inventory will need to be calculated into the model where required in order to compensate for first pass yield and longer than consumption rate replenishment lead-times.

Serious discussions need to happen early on about instituting an effective Sales, Inventory and Operations Planning process. Plans need to be put in place that include financials and have plan B and even plan C figured out in advance for when things go wrong. Everyone engaged needs to have their finger on the pulse of the entire system while they collectively fundamentally change the way they respond to workstops. It

is not just an isolated production problem, quality problem, financial problem, planning problem, buyer problem or an MRP problem. It's a system problem. If you want to transform your business to be a successful, team based, level loaded, low waste, well-oiled machine, you need to treat it as a system. You need to change the game.