



As the World Turns Nothing has changed, or has it?

by Duncan McLeod

President's Note...

This month DBMEXECUTIVE takes a philosophical look at change. In the world of the Internet, and the flat landscape of globalization, change is now common place. Are we undervaluing some of the benefits because of our easy acceptance? I discuss changes that have happened, and those still to occur.

Also this month, Old McFedman writes about S&OP and ploughing, and how targets and the means to hit them, are key to production stability.

"Nothing has really changed. After all these years, we all still do things the same way."

These were the words spoken over lunch break by a participant in a Sales and Operations Planning course I was teaching. As with most classes, this one focused on the current state, and what had to be done to move to the next level. I didn't put a lot of energy into harping on how things had improved.

But sometimes you need to look back and see where you have come from, in order to get the energy to keep pushing forward. That's the thing about change today—you have to be sure that the change is an improvement and not just for its own sake. Things have moved a long way since I started in this field back in the 1960's. Here are my impressions of some of the changes I have been a witness to.

"I see the globalization of the supply chain as the single biggest contributor to world peace."

Inventory velocity over time

I remember one of my early projects with inventory turns. Our goal was to improve the turns from 2 to 4—a 50% reduction in inventory! Today this company turns their inventory 25 times a year, and is trying figure out how to increase the velocity even more. Most of the people there today would not be able to imagine the early significance of two turns, let alone four!

In a recent engagement, the plant was launching a project to take two hours out of their WIP. Back in the 60's we were planning in quarters, not hours. Things are moving much faster today, not always better.

I now see cases where inventory levels are being sub-optimized, resulting in higher administrative costs with reduced efficiencies and services. And on it goes.

Our plants are disintegrated

In the early days of the Ford Motor Company, they owned the supply chain from the iron mines through to the distribution network.

Over the last 40 years, there has been a continuous movement to outsourcing. This started in the automotive industry, where high costs at the OEM's made it advantageous to move work to lower cost suppliers in the supply chain.

As a result, the production control functions in the plant have been simplified, while supply chain management has become more complex. Unit costs have been reduced by going to low-cost suppliers who focus on their core competencies, while transportation costs have increased.

I was in a vertically integrated plant a while back and the experience sparked some memories. This plant had their own foundry, stamping lines, machining centers, sub-assembly, manufacturing, and final assembly. The operations manager

pointed out that the lift truck routing was not optimal, since stampings had to be moved the full length of the plant. I suggested this was actually quite a bit shorter than moving them in from China. And on it goes.

Disintegration has reduced the cost of products and improved manufacturing focus and quality. No argument. But people sometimes get seduced by theories and trends without enough focus on plain common sense.

We have a global supply chain

I remember when my dad brought the first boatload of Japanese steel into Hamilton, Ontario.

For those of you that don't know Hamilton, it has been the center of the Canadian steel industry for the last century. The pressure and threats from the local steel barons were almost enough to have him send it back. But he didn't. Free trade zones, best cost countries, transportation and communication technologies have all helped to widen the span of the supply chain.

The result has been lower material costs, and in many cases improved component quality. It has also driven up inventory levels and reduced flexibility, because the length of time in the transportation lane has increased. The supply chain management complexity has certainly increased as the supply itself has gone global. And on it goes.

I see the globalization of the supply chain as the single biggest contributor to world peace. I don't say this lightly.

As the supply chain has evolved, people from all parts of the world have had to work with each other. People have developed new levels of understanding and have learned to respect each other's strengths and weaknesses.

The understanding between cultures, and the financial interdependencies of a global supply chain, do a lot more for world peace than rallies and flag burnings.

Most of the world's hot spots are countries that are not participating in the supply chain. To my way of thinking, if we build them into the supply chain they will become part of the global community and the risk of conflict will be reduced. Imagine all the people, supplying all the world. And on it goes.

Technology for the taking

I remember my first electronic calculator. Not many of you reading this will remember the old paper tape adding machines. They were called adding machines because that was all they could do. No multiplication or division.

I built spread sheets on D-sized drawing paper, and filled in all the calculations with an HB pencil because I had to be able to erase. My inventory records were kept in a card file, bills of material were in an 8 1/2 by 11 binder. My version of the schedule was written on a formal, paper scheduling form.

The plant built what they could. We got interplant orders in on a telephone copying machine, the predecessor to FAX. All of the orders were taped together into a long string so they could be fed in at night when telephone rates were cheap. High speed hard copy communication was done by telegram or telex (paper tape machine). And on it goes.

Generation Y and Z take technology for granted. Laptop computers, e-mail, Internet, spreadsheets, video conferencing, BlackBerry connectivity—they can't imagine the world any other way. It's how they see things. Their way of

keeping connections in a fast moving world. And on it goes.

Safety and Quality

In the old days, if you had all your fingers you were new in the press shop.

I once witnessed a set-up man lose his fingers while jogging a press. Another time, I stood by as half a ladle of molten aluminum spilled into a foundry man's boot. These occurrences weren't rare. They were just part of a day in a factory. Thankfully, that has changed.

Our factories are much safer, and almost every factory I go into these days has a formal safety program and a focus on eliminating accidents.

Defective material has become unacceptable. Back in the sixties we would never have thought in terms of PPM. PP hundred would probably been more like it, but then parts were never really that bad. If you needed them bad enough you found a way to use them.

We used to call our non-conforming area the hospital. We put parts in there to heal, and when we really needed them, sure enough they were healed and we could use them! It took a while through the late 70's and early 80's to kill that culture, but we did. Today everyone expects their parts to be made to exact specifications. The disintegrated supply chain would not work without it. And on it goes.

Other things must change

We have made a lot of progress, but I am still frustrated by some of the fundamental items we have not addressed. These are my Seven Wonders of the Production World, and they come up time and again.

1. Huge investments in computers and bar coding systems but no focus on inventory accuracy.
2. Master Schedules in Excel spreadsheets.
3. Hold Purchasing accountable for component prices instead of landed cost or total cost of acquisition.
4. The Sales and Operation Planning Process is not driving the Demand Plan and the Master Schedule.
5. Product line proliferation.
6. Let's do Kanban this week.
7. Not enough people understand the supply chain.

The good news, my Seven Wonders are in areas that can be improved. I hope when I look back in another 10 – 15 years, we will have moved passed these issues and be working on the next level of improvements.

Until then, let's get started!

Get your inventory accurate, fix your master schedule, LINK your S&OP to your demand plans and master schedule, get your supply chain people certified (including some of the young up and comers), use Kanban because it makes sense not because you couldn't get anything else to work, and think about how you want to measure the effectiveness of your purchasing budget. Lots of opportunity!

In the next few issues of the DBMExecutive, we will describe some concrete activities that DBM has done to help clear our customers from these Seven Wonders. See you there.



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Everything I know about S&OP I learned on the farm Plowing your way to S&OP stability

by Doug Dedman

Things change. We all know this. Our kids get older, we get older. We start our morning with coffee, then we are told we need to cut back on coffee. So we start our morning without coffee. Change is not always our choice, sometimes it is imposed on us. This observation leads me to the question: How do we plan for change without over-reacting?

When it comes to S&OP, we strive for consistency in how we deal with change. But how do we put this into practice?

For example, each month you run your S&OP process. You have a sales pre-S&OP meeting. In this meeting, sales and marketing look at both your customer forecasts and your marketing plans, and come up with a demand forecast. This forecast is reviewed by operations, who put together a production plan to meet the demand. Then, in the executive S&OP, you finalize the plan, and agree on the sales and production levels going forward. The plan may go out for 12 months but, at the very least, you are focusing over the next three months. Finally, you align your production resources and suppliers with this plan by updating the master schedule and material planning.

Another job well-done. You think about having a coffee after all.

Then the month begins. The day after the S&OP meeting (or maybe the week after), the emails and phone calls begin.

"Sales look a little soft," someone says.

"Our order inflow rate doesn't match the forecast," someone else notices.

"I think we should reduce daily production levels due to the lower sales," you hear in a voice mail message. "Call the suppliers to get them to reduce next week's shipments."

"We need to reduce a shift next week," you read in an e-mail.

At the end of this barrage you are calling suppliers to defer some shipments so that you are not left with excess inventory. You've made the right decisions based on what's truly happening. You know you did. Or did you?

The month continues.

Orders start to come in much stronger. The good news is that it looks like you will make the sales forecast for the month. The bad news is that you've already reduced your production levels and supply pipeline, based on the lower levels. To make the sales you will need to run overtime. This means you have to call those same suppliers again, and this time get them to expedite the shipments that you just deferred. Everyone works hard and you pull it off and make your numbers.

Maybe a coffee and a doughnut.

In your next S&OP meeting, you review your last month's performance. Both sales and production come in very close to your original call for month. It looks like the process is working well. Everyone wipes the sweat from their brow—another month on target!

However, think about what it took for you to make the numbers!

You had to run overtime after removing shifts from the schedule. This hurts your produc-

tion efficiency. You "jerked" your suppliers around by sending mixed signals to them in the month. It took a lot of your resources to pull off a plan that you had already laid out. You ask yourself: How do we stop doing this?

The answer comes from farming. You plow.

Old McDedman had a farm

For those of you who aren't aware, a plow is a tool used to turn soil upside down. You pull it with a tractor, and it has blades that cut into the ground and flip the soil to one side, burying the growth that is on top. Because it can only turn the soil one way (in North America anyway), in order to plow a field you need to start in the middle of the field and work to the outside edges.

A point of pride for a farmer is to see how straight they can plow and plant their fields. When I was a kid growing up, it was a favorite past time of my father's to drive us through the countryside to compare crops and, yes, to look at how straight the neighboring farmers plowed their fields.

You may be wondering how all this relates to S&OP. If you've never had the pleasure of trying to plow a field (knowing that all of your neighbors will be assessing your handiwork), that is a fair question.

The answer is that meeting the challenges of plowing a field are very similar to meeting the challenges of S&OP changes. It's a matter of perspective, and of keeping your eye on your target at all times.

You need a target

In order to plow straight down the field you need to have a visual target at the end of the field. A tree, or a post, something that you can see. When my dad first taught me, it was the big maple tree at the far end of the field.

Once you pick your starting point at one end of the field, you set the tractor towards the tree and keep driving straight toward it. You ignore the slight dips in the field, the distractions of other trees—you keep to your course. It's important

that the tree is visible the whole length of the field. If the field had a hill in the middle, where you would be unable to see the target, you may need to set a medium distance target. Some farmers put a stake in the ground in the middle of the field until they can see the tree.

S&OP is about setting targets that you can keep your eye on. In the absence of S&OP, we only have annual targets or quarterly targets to go by. When these are the only targets we have, by the time we get there and assess our performance, it is already too late to make adjustments.

The monthly target is the best one to focus on because at the end of each month you assess your performance and make adjustments for the next month. S&OP is an iterative process each month. Set the target and stick to it.

Just as the tree needs to be big enough to see, the same set of targets in S&OP need to be

visible to everyone. You need agreement on the targets in order to align the plans to meet them.

Beware the front of the tractor

A field is never flat. You drive your tractor slowly across an uneven surface. At a slow speed the tendency is to start looking over the front of the tractor, and reacting to the hill or knoll that is right in front of you. Then you begin to over-react and steer left, and right, to account for the changes in terrain. At the end of the field, you are staring up at the tree you set as your marker, but when you turn around and look at your work, the furrows snake across the field instead of line up in a nice straight line. It takes discipline to keep your focus on the tree, and ignore the other obstacles vying for your attention.

This potential loss of focus is the scenario I presented at the beginning of the article. With S&OP we make it to the monthly numbers, but the process to get there is not pretty. Unlike farming though, the result of us reacting to the changes right in front of us may not be immediately obvious. They often take the shape of:

- High expedited freight charges
- Purchase order revisions
- Labor inefficiency
- Lower fixed cost absorption
- Higher inventory

Keeping the lines straight

So how do we avoid overreacting to the changes? Here is a list of four points to help you stay the course with S&OP:

1. Trust the targets you set. You build trust by proving that you can do the job repeatedly. Measure your performance to plan for sales and production. If you do not hit your targets, use root cause analysis to find out why. Fix the problems and move forward. As your accuracy gets better, over time you will build confidence in your targets.
2. Avoid using daily measurements to make changes to the plan. Just because the information is available every day doesn't mean we want to react to it. Be careful with these metrics.
3. Make changes to the plan with everyone involved. Set tolerance levels on weekly measurements outside of which you will revisit the plan. Change will happen in the month. Establish a set time when you bring back the team to make changes to the plan. Production shouldn't be changing production levels without input from sales and marketing.
4. Through these activities, gain a common understanding of the monthly "seasonality" for each family. If orders typically don't come in from a large customer until the second week of the month, a low order inflow in the first week of the month may not be an indicator of a poor month. This is information that needs to be shared and understood within the organization and used to develop your overall plan for the family.

The reality is that no plan is perfect. Changes will happen. How we react to those changes is what separates the straight lines from the crooked ones.

And now, I'm going for my green tea. What, did no one ever tell you about substitutions? Green tea for coffee is perfectly acceptable. Just ask me.

Remember: straight lines. People are watching, so give them something good to look at.



The result: nice straight lines.



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