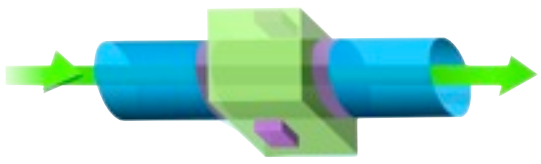
March 5, 2008

DBMEXECUTIVE

ISSUE 1.3

DBMExecutive is a monthly newsletter created by DBM Systems Inc., a supply chain consulting group located in Cambridge, Ontario, Canada. To get your own copy please visit us at www.dbmsys.com.



Nobody knows the trouble I've seen Becoming an effective node in the supply chain

by Duncan McLeod

President's Note…

Sometimes, you have to think inside the box. This is not a slight on creativity, but when there are rules and procedures designed to make a process work, you can't invent your own on the fly. Or while you're flying.

In DBMEXECUTIVE this month I will describe nodes in the supply chain, and what it takes to participate in a collection of supplier connections.

And after two great introductory articles on Sales and Operations Planning, Doug takes you through the first step in the journey—doing the S&OP Self- Assessment.

In the first article, *The North American Aviation System Runs at Seven Sigma: Why doesn't your supply chain?*, I compared the aviation system to the supply chain we all live in. I highlighted differences between the two systems that included how changes are brought into each system. The second article, *Risky business at 30,000 feet and on the ground: How is inventory like aviation gas?*, dealt with the relationship between AVgas and inventory, and how running out of either can be deadly.

This article continues the theme with building an effective supply chain.

But this time I will focus on the nodes, the building blocks in the chain, and what it takes to be a successful node. I will explain the basic measurements that must be in tolerance to survive —both in flight and in your business.

In the end it's about control, but I struggled with how to make this point clear because I felt it was time to drop the aviation comparisons.

As a pilot these comparisons are always on my mind, and they're an easy way for me to walk through my thoughts. But maybe two articles are enough. So I began writing but found that I couldn't avoid the parallels.

I apologize now for finding an aviation relationship yet again. Please buckle up as you fly with DBMAir one more time. Sorry that there's only coach. Lean, you understand.

What is a node

A supply chain is made up of links and nodes.

Nodes can be raw material processors, manufacturing plants, distribution centers, retail outlets, or end consumers—as I said, the building blocks in the chain. These nodes are connected by links, the channels or pipes between the nodes.

Typically, all of the activities in a node fall under a single management structure. Here I mean the decisions the CEO or General Manager makes to get things done.

However, when nodes are grouped together in a supply chain, there is no overseeing management structure. The supervision between nodes is managed by rules, contracts and relationships. The things we have signed, and the things we do.

This is the core of our supply chain, and we are always trying to "Lean out" the operation of the node to make it better. This means less waste, faster cycle times, less inventory, less overhead and more efficiency.

In an Aviation System, the airplane is like a node. As the pilot in command I am responsible for the performance of the airplane. When I think of Lean in the airplane I think faster, further, less fuel, more payload and safer.

My flight training teaches me to prioritize my activities in sequence to reach these goals:

Aviate: Fly the airplane. Make sure it is right side up and all the gauges are green.

Navigate: When all the gauges are green I can focus on pointing the airplane where I want it to go.

Communicate: If the gauges are all green and the airplane is pointed in the right direction, then it's time to talk to the system and make sure we are all following the same plan.

When I began flying years ago it was easy to look out the window to tell if I was aviating and navigating correctly. The airspace I flew in was uncontrolled—communication was more social than a requirement.

But it didn't take long to realize that if I wanted to fly anywhere meaningful, I would have to fly in controlled airspace and in the clouds. The rules changed. I had to become a system player. I had to learn to fly by trusting the gauges, relying on my instruments.

When flying a plane with no visible reference to the horizon, a pilot must fly by instruments. Evidence shows that the pilot has 45 seconds to live if he does not.

Compare this to the manager of a node in the supply chain. She understands the need to operate safely and efficiently, but she doesn't feel a need to act according to the rules and procedures of the supply chain. She gets frustrated, but not surprised, when other nodes don't conform. She gets more frustrated when she realizes that she is not sure what the rules and procedures of the supply chain are!

Back to supply chain basics

In a classic supply chain, the OEM makes a final assembled product that will be sold through a distribution network to end customers. The Tier 1 supplier produces a sub-assembly for the OEM, and the Tier 2 supplier produces components for the Tier 1 supplier.

In the ideal world, the OEM generates a master schedule (through their S&OP process if you have been reading Doug's articles).

This master schedule states what the OEM plans to build. They explode this master schedule through their bill of materials to determine what components they need. Then they subtract what components they have— to calculate what components they have to get. They may apply some lot size rule, and then communicate these requirements to the Tier 1 supplier.

The Tier 1 supplier repeats the process. They generate a master schedule (again from their S&OP process), explode it through their bill of material to determine what they need, net this need against their inventory to determine what they have to get, lot size it and then communicate the need to the Tier 2 supplier.

All of the linkages between the nodes are electronic and data moves instantly, but what if the inventory at the OEM is wrong? If the Tier 1's master schedule is not what they plan to build? If there is a bill of material error somewhere in the system? What if people just don't understand the information? Who's watching the gauges?

Fly the friendly skies

When running a factory with no visible reference to key measurements, a manager must fly by instinct. Evidence shows that the manager has 45 seconds before lack of information fatigue sets in.

Why is it that when we look at a typical manufacturing node, we see inaccurate inventory records, unrealistic and unstable master schedules, multiple versions of the same bill of material, firefighting and expediting? All symptoms of not knowing where you are, where you are going, or how you plan to get there. Aviate, navigate, communicate.

There should be a set of software instruments for each node in the supply chain. If these measurements are not within tolerance then the supply chain must take exceptional action to accommodate it.

The key measurements that must be maintained include:

Master Schedule Attainment. A measure of how closely the plant runs to the master schedule.

Master Schedule Stability. A measure of how many changes are made in the frozen and firm zone of the master schedule.

Inventory Accuracy. A measure of the accuracy of individual inventory records.

Accurate Bills of Material. A measure of the accuracy of individual single level bills of material.

Vendor Schedule Attainment. A measure of how closely suppliers adhere to the vendor schedule produced by a node. (Not to be confused with vendor performance as we will discuss in a future article)

Vendor Schedule Stability. A measure of how many changes are made to the vendor schedule within lead time.

S&OP to Master Schedule Synchronization. A measure of how closely the master schedule matches the production plan or "who is flying the airplane captain?"

S&OP to Demand Synchronization. A measure of how closely the S&OP demand plan matches the actual demand.

People Who Know What They Are Doing (PWKWTAD). You really want to have a trained pilot flying the plane!

Get these measurements correct, and you are on the way to operating an effective node in the global supply chain. If any of them are wrong you can expect to see firefighting, expedited freight, unplanned set ups, overtime and excess inventory. All of these financial penalties are a result of not meeting the basic requirements.

Our next article is about key measurement one: Master Schedule Attainment.

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The S&OP Self-Assessment
Finding opportunities before they find you

by Doug Dedman

I have a water problem. I live in the country and we have a well, and the well supplies two houses plus a barn with some cattle.

My problem is that we don't have good water pressure.

In our house, when someone is in the shower, no one else runs any water on pain of death. And believe me, I have come up with some pretty gruesome ways. I've never had to use them yet, but I am tired of being scalded or frozen all on the whim of a flush.

The challenge is that I don't exactly know what to do to fix the problem. It could be the pump in the well. It could be the pressure tank. It could be the pressure tank switch. It could even be a blockage in the pipes. Or it might be the age of the plumbing in my old house. I don't know.

The challenge with fixing a problem like this is that we need to clearly consider the situation first. We need to find out where to focus our money and energy to fix the problem, and not just change things and hope for the best.

But I can't do this on my own. I need to bring in a plumber to look at all the potential causes to find out where to start.

Once I know the root cause of the problem, fixing it should be fairly straightforward. The plumber will tell me that. Me, I just want a nice, warm, uneventful shower.

I told that story because it's true, and it also helps me to draw an analogy.

Doing a Self-Assessment of your S&OP process is like having the plumber in to find the cause of my low-water pressure.

It's not about pointing out how good your process is. It's about finding where to focus your organization so that you will quickly see improvements to the process, and get the results you expect from a formal S&OP process.

Warm water, just when you need it most.

"The Self-Assessment is about finding where to focus in your organization so that you will get the results you expect from a formal S&OP."

What is the Self-Assessment

The Self-Assessment is a benchmarking tool we created to help a company find out where they are on their S&OP journey. Unlike my water problem, where I need to call a plumber to assess the root cause of my low pressure, you can complete the Self-Assessment on your own. It will help you determine what's working well and what needs to be fixed.

The tool is made up of a series of questions divided into five critical areas, needed to start and run an effective S&OP process. You will get a separate score for each area. This will help you to isolate where you should focus your efforts to quickly move ahead with the process.

Here are the areas and some examples of the type of question in each:

Top Management Involvement: A key success factor for S&OP is the company president. The questions in this area focus on the involvement of the President in the process. Is she running the monthly S&OP meetings? Does he have a clear vision for the S&OP process? Does she clearly support the S&OP project lead? Due to the importance of their involvement, the results of this section are weighted twice as heavily as each of the other areas.

S&OP Process: How well is your monthly S&OP process following recognized standards? Do the meetings occur every month at the same time according to a well-published schedule? Is the S&OP meeting supported by a series of pre-meetings to determine the demand and supply pictures? Does the meeting involve reviewing past performance and determining reasons for out-of-tolerance performance?

Demand Management: A good S&OP process requires clear ownership of the demand planning process, measurement of the demand plan (forecast) accuracy, as well as clear communication of the demand plan. Is the demand plan in the same families and units as the production plan? Have you established accurate tolerances for the demand plan? Is there root cause analysis on out-of-tolerance performance? Is senior management involved in and running the process?

"The Self-Assessment tool can help you measure the basics..."

Operations Management: Much like demand management, this section looks at the involvement and processes related to operations. Is there a clear link to the master production schedule (MPS) from the production plan? Is there clear ownership of the operations plan by the VP of Operations? Is past performance measured against the plan and established tolerance levels?

Supply Chain and New Product Introduction: The performance of these two areas will impact the ability of your organization to meet the plan laid out in the S&OP meeting. How well are these two functions integrated into the S&OP process? Are the risks associated with new or lost suppliers reviewed as part of the S&OP meeting?

Remember, the questions in the Self-Assessment are meant to measure S&OP mechanics and structure. Are you doing the things that lead to an effective S&OP process? It's kind of like checking the basic elements of my home water system. If I have them all, the system should work. If I'm missing some of them, I'm almost guaranteed that it won't work.

Completing the Self-Assessment

I'm fortunate that I know a plumber to call that I trust. He's a professional. Once he assesses my water problem I won't ask for a second opinion.

But when completing your S&OP Self-Assessment you will want more than one opinion.

I recommend you have several people in your organization complete the Self-Assessment. Get that second opinion. Have the key roles involved in S&OP do this. This includes the President, VPs of Sales, Operations, Finance, and Supply Chain, as well as those that execute the process and rely on the results.

Role	Top Management Involvement	S&OP Process	Demand Management	Operations Management	Supply Chain and New Product Introduction
VP Operations	2.2	2.0	1.5	2.1	1.3
Plant 2 Scheduling	3.7	3.2	3.1	3.3	3.5
Plant 1 - Plant Manager	2.3	2.9	1.3	3.1	2.0
Demand Planner	2.7	2.8	2.0	2.8	2.3
Plant 1 Scheduling	3.7	2.8	2.1	3.6	2.1
VP Marketing/Sales	3.5	3.0	3.1	2.6	2.0
Plant 2 - Plant Manager	3.3	3.1	3.0	3.0	3.0
President	2.5	3.2	2.8	2.4	3.1
Director Sales	2.0	3.2	3.0	2.9	2.5
Plant 2 - Customer Service	3.8	3.7	3.2	3.8	3.8

Take the results and compare them to get a more accurate idea of where you are. The following chart is an example of the range of results you may see.

What can you expect from the Self-Assessment

After the plumber assesses the plumbing, he will have a clear idea of what the problem is. Then he will put a plan in place—a path for me to follow to fix the problem.

With your own Self-Assessment however, the plan and path may not be as clear for you.

There are three challenges you can expect.

1. ***You see a broad range of results across the organization.*** Due to organizational, personal or cultural biases or perceptions, you can expect to see a range of results. In other words, people don't always answer the Self-Assessment truthfully. There are reasons for this, and some of them are:
   - The problem is not in my backyard. Operations may be willing to point out problems in demand management, but not highlight challenges they have in their own area.
   - There may not be a clear understanding of what other areas are doing as part of the planning process; therefore assumptions are made when completing the Self-Assessment.
   - Reporting structure. Some people in the organization are unwilling to criticize those higher-up in the organization. Sometimes they score questions the way they would like them to be, not as they actually are.
   - Cultural bias. Cultural differences may affect the clarity of the results.
2. ***You are unable to complete the self-assessment because you don't have enough knowledge about S&OP.*** This is typically the case for those companies that are just starting out with S&OP. If your organization is at this point, you may want to consider educating your key players prior to them completing the Self-Assessment.
3. ***You don't know what to do with the results.*** The assessment will identify things you are doing well, along with the things that you need to improve. Both are equally valuable.

If you find any of these skewing your results, you need someone else to come in and help interpret them before putting a plan together. It may be time to call the "professional" to get you on the right path.

Where do we go from here

The Self-Assessment will highlight the areas you should focus on to improve your S&OP process. The next step is to put a plan in place to address them. As you execute your plan, you can then use the Self-Assessment to measure your progress as you improve your S&OP mechanics.

Next month I will talk about interpreting your results to help you get the plan together. In the meantime, you can access a PDF version of the Self-Assessment at www.dbmsys.com.

Now I need to go and call a plumber.

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