



Risky business at 30,000 feet and on the ground How is inventory like aviation gas?

by Duncan McLeod

President's Note...

This month **DBMEXECUTIVE** will take you flying once again. My article compares aviation fuel to inventory, and draws some startling conclusions about how running out of inventory can be just as deadly for your business, as running out of fuel for your passengers.

And to continue with Sales and Operations Planning, Doug explains the dangers, opportunities and strengths of a well defined and executed S&OP.

To me, everything is about flying. Without enough fuel or without a parachute, it all depends upon how much risk you want your organization to assume.

Flying is a series of carefully planned avoidances.

Follow the rules and get them right, and by most estimates you will arrive safely. Stray from the path, shortcut processes and policies, and we all know the result. The nightmare is broadcast from the cockpit voice recorder on the 6 o'clock news for everyone to witness.

"Mayday! Mayday! Mayday! Charlie-Foxtrot-Bravo-Victor-Charlie! Cessna 340—one five zero miles off the coast of Newfoundland. One five thousand feet, multiple engine failure, fuel starvation, ditching in one zero minutes! Mayday! Mayday! Mayday! OK transmit on 121.5. Transponder emergency code set at 7600! Or is that the hijack code? Damn, I forget! Ken—get the raft out from behind the back seat. Seat belts everybody! We're going to ditch in the North Atlantic! Ditch into the wind or parallel to the swells? Nobody ever gave me a straight answer! Gear up for sure! It looks cold down there...cold and wet. Mayday! Mayday! Mayday! Charlie-Foxtrot-Bravo-Victor-Charlie...."

I've never had that nightmare. I have dreamed about it. I have practiced many emergencies throughout my 30 years of flying, but that one has never come up. I have never run out of fuel. There is no good reason to run out of fuel.

Regulations and common sense stipulate that there must be enough fuel to fly to the destination, fly an approach, and also fly to the alternate airport and land with 45 minutes of reserve fuel. This is the buffer, the safety stock—45 minutes of fuel. But this, still, is not enough to ensure safety.

The weather forecast for the alternate airport must be such that landing would be ensured. What does this mean?

I have enough fuel to go where I plan to go, deal with an unplanned weather condition that prevents landing, fly to an alternate airport that has an acceptable weather forecast, attempt to land at the alternate, and then still have enough fuel to fly another 150 miles if needed. Rules and regulations. It is hard to explain running out of fuel. The consequences are so severe.

"What do you mean you can't ship it!! We need those parts tomorrow at seven a.m. or our line is going down! No ifs, ands, or buts. And right now yours is on the line! Ten-thousand-dollars-a-minute! Do you hear me? That's what it will cost to shut the line down. Have you got that kind of money because I don't! Look, I don't want your excuses! I don't care how you do it, just get that here!"

This nightmare I have had. This one is real. We worked all night. We broke into production with an expensive special set up.

Then, I drove the parts to the airport myself and made sure they were loaded on to a converted Falcon 20 (an expensive executive

jet). I then made sure that we had somebody waiting at the airport in Tennessee to get the parts over to the customer by 5:00 a.m. Afterward, we congratulated each other on a job well done! We survived another one!

Inventory outages are preventable

The point is, like running out of aviation gas, running out of inventory is something that is preventable, and should never happen.

It's easy to point the blame at our customer's changing demand, our factory having unexpected scrap, bad weather, vendors not shipping on time—pick your reason.

But the bottom line is there just wasn't enough finished goods inventory to get to the alternate, and then fly another 150 miles!

This recurring nightmare is equally horrendous to businesses.

Not unlike the consequences of running out of fuel in the airplane, the firefighting expenses required to respond to this business emergency eat away at the profits of an organization. You can't hide these, they are right off the bottom line.

Airfreight to the customer, airfreight from the vendor, unplanned overtime, unplanned set ups, reworking good inventory to convert it into required inventory—add to this the human stress associated with all of the above. And add to this the negative impression created with our customers and suppliers. Not good. But we have all been told **INVENTORY IS BAD! INVENTORY IS A WASTE!**

Well, as a pilot, I hate carrying extra fuel too! Every 40 gallons of fuel equals 240 pounds of weight. Every time I add another 240 pounds of fuel, I need to eliminate one passenger and their baggage. With full fuel tanks I can fly for 4.5 hours and carry 3 people. Remove 40 gallons of fuel, and I can fly for 3.5 hours and carry 4 people. Remove another 40 gallons, and I can fly for 2.5 hours. Extra fuel reduces the number of passengers I can carry. Sure, **FUEL IS BAD! BUT RUNNING OUT OF FUEL IS WORSE!**

Plan and Plan Again

A successful flight needs effective fuel planning and management. The similarities to inventory control are overwhelming. Here are the 5 critical steps that all pilots follow.

Step One - Develop a Rough Plan

How many people will be in the airplane and what is the ultimate destination? Can I fly to the destination non-stop or do I need to plan a fuel stop?

Step Two - Develop a Detail Plan

There are two critical variables that change on every flight – the winds, and the weather at the destination.

Step Three - Fuel the Airplane

This not a simple matter of "filling it up". I need to know the amount of fuel currently on board and the amount of fuel required for the flight in order to calculate the amount of fuel to add to the tanks. *Sounds a lot like calculating how much inventory to add to finished goods.*

Step Four - Check the Fuel

Before every flight, I check the quantity of fuel in all of the tanks—there are five on my airplane. *Sounds a bit like a physical inventory.* I take samples from all of the critical drain points to ensure the right color of fuel and the absence of water contamination in the fuel. *Sounds a bit like a quality check on inventory.*

Step Five - Monitor the Flight

Winds are never as forecast, conditions at destination and alternate airports change. If things are not going as planned then I need to re-plan. This has become an automatic process—I formally recalculate fuel reserves every 30 minutes during a flight.

It's a lot of work to perform these steps each time I fly, but running out of fuel is worse. It's about making my passengers, my customers, safe and protected from unexpected changes. Fuel is my inventory and I have never run out. How do you approach inventory control for your own customers?

Customer Service is King

If you think it is impossible not to run out of inventory, then you always will. If you think inventory is mandatory, then you will figure out how to make it work. That is the difference between AvGas and Inventory. I cannot accept running out of AvGas, and if you approach inventory with the same attitude then you will find it is possible. This isn't theoretical chatter. Let's look at some of the similarities between AvGas and inventory.

We don't know how much we are going to sell. Calculating demand is difficult and there will be errors. Compare this to flight planning. Every effort is made to calculate the fuel required for the trip, but winds, flight conditions and routings may change. Contingencies are added because the plan may change.

How much inventory do we have?

Our computer systems tell us the current status of inventory—but are they right? Without good cycle counting and a root cause elimination process in place, it's likely that there are errors in the inventory record. I would not consider taking off without physically checking the fuel in the airplane—cycle count.

Some of our inventory may be bad.

We need good quality management processes to ensure that our finished goods are all usable. This issue becomes more prevalent with products that are perishable or have shelf lives. That is why I strain the fuel drains prior to each flight to ensure the fuel is good.

Customer Demand may not be as planned. This is equivalent to conditions at the destination deteriorating below minimums. We need to have enough fuel (inventory) to reach the alternate. There is no penalty for landing at the destination with too much fuel, there is a penalty for not having enough fuel to get to the alternate.

If you do not run out of finished goods you will not have disappointed customers. Happy customers remain loyal customers.

Ask yourself this question: How much work in process and raw material inventory are you carrying because you cannot stabilize your master schedule? My experience indicates that many organizations could achieve a zero stock out objective by improving finished goods inventory planning and management, stabilizing their master schedule and then reducing their WIP and component inventory. How much are you paying to expedite your supply chain, and how much time do you spend fighting fires caused by stock-outs?

The difference between a safe landing at the destination and a controlled crash in a remote field is a solid process for planning and managing fuel. Is inventory really any different?

Next month I will focus on the node, and explore the rules you have to meet to be an effective node in the global supply chain.



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Dangers, Opportunities and Strengths For S&OP, it's about finding your reason to do it.

by Doug Dedman

Have you ever made a change in your life just because you knew you should?

Maybe it was losing weight. Or you quit smoking. Even flossing your teeth daily. To make a change and to make it stick, you need a compelling reason. Something that motivates you to action, a personal commitment that is all yours—you own it completely.

For me the change was completing my MBA. This one haunted me for years. I thought about it for a long time before I made the commitment to get started. But to make that commitment stick was another thing.

Before I would take the action to do it, I needed to know that I'd get something out of it. I had to be convinced that having an MBA would be worth the investment in both dollars and time.

For me, it wasn't about the degree, it was about what I'd learn while getting the degree.

But there was still something more I wanted from an MBA. I needed it to help formalize the business experience I've gained over the past 15 years, to put some theory behind the practice.

Personally, my understanding of finance was limited to debits and credits on a balance sheet. If I was questioned on a financial issue, I never felt I had the substance to back up my answers. Furthering my education would give me that comfort.

And I love to teach. I've taught at the college level—both operations and material planning courses. It's a bit of a hobby, but I love it. But what if I wanted to teach at the graduate, post graduate, or doctoral level?

While an MBA doesn't guarantee success in the business world, in the academic world you need credibility and this is measured in terms of degrees. A master's degree is a good starting point.

Of course there were other reasons, but when I think about them now, they fall into three categories. What dangers did I want to overcome, what future opportunities did I want to capture, and what strengths did I have to build on? The combination of these questions and answers compelled me to action.

It wasn't until after graduation that I realized how important these categories are to organizational change as well.

Start with a reason

When you look at making changes to the way your business is managed, the same type of analysis applies. You need a compelling reason to adopt a new management process, to change something that has become a matter of course for your business and your employees.

In last month's article, I shared that communication and synchronization are two of the key outcomes of the S&OP process.

But like the concept of getting an MBA, where the outcome is a degree, is just knowing the goal of S&OP enough to embark on the S&OP journey?

You need reasons to start. Compelling reasons why without a formalized S&OP process, your business will not perform to its potential. You need to understand your DOS—the dangers, opportunities and strengths of your own organization before you begin.

The sequence isn't important, but identifying the contents with each category is.

DOS - A User's Guide

Dangers

Is there anything standing between me and the things I need to achieve?

Opportunities

What can I do that would improve my situation? What things can help?

Strengths

What do I have to do today that I can build on to neutralize the dangers and capture the opportunities?

Finding your strengths

Let's look at strengths first. What do you have today that you can build on? Look at your management team, look at planning processes. What makes your business run?

Most firms have an annual budget process where they set the overall financial objectives for the company. This budget is the forward-looking plan. It describes how resources will be used in order to meet the business objectives. Typically, the operating results are reviewed monthly against the budget to ensure that activities are tracking to the plan.

Some firms are sophisticated enough to change the budget or plan, in response to changes in the market. After all, we created the annual budget with our best estimate of what was going to happen, and we all know how estimates can change.

Good monthly financial reporting, where you track your results against a goal (budget) means you have processes in place to encourage synchronization in your organization.

Also, consider your management team. You have strong people in operations, in sales, in supply chain management, all that's missing is getting them to work as a team. In most cases you have to add the process to the people to get the results.

These are all strengths. These are cooperations already in place that can help you when you start a formal S&OP process. In many cases you don't have to start from scratch. You build from your strengths.

Putting danger in its place

The biggest danger any organization faces is going out of business. This may happen due to a new competitor, losing a key customer, spiraling input costs or economic conditions. Do your current planning processes help you deal with these dangers?

Firms without an S&OP process tend to do most of their near term strategic planning and measurement off their financial data. Why does this matter?

Financial measurements are based on the past. By the time you see the measurement, the event has already occurred. It's a bit like driving your car while looking in the rearview mirror. I can see if I'm between the lines, but it's pretty hard to react to the turn in the road ahead.

“Financial measurements are based on the past.”

“You have to add the process to the people to get the results.”

Even in a steady-state business, S&OP can dramatically improve the efficiency of your planning process. Think of the time wasted dealing with competing priorities between departments, or even within the same department—these are opportunities for improvement. All these activities hit the bottom line.

Clear communications and coordination of your execution plan (Production Plan to Master Schedule to Material Plan) will reduce expedited freight, increase operating efficiency and reduce overtime. Synchronizing your plan through procurement and capacity planning will lead to better customer service levels and improved on-time shipments.

These decisions are difficult to make when only dealing with the financial plan. A formal S&OP is inclusive. It builds cooperation across your organization and makes you better able to react to business dangers as they occur.

Seeing opportunities in balance

Opportunity comes in the form of market growth. New products, new geographical markets, or new customers—can your business capture these opportunities today?

Many organizations can't. The reason is we are good at what we're doing today, but not what we need to do tomorrow.

Capturing opportunities is about changing your plan. It is difficult to organize and coordinate your organization around the change. We struggle with conflicting priorities, different interpretations of what is required, and the applicability of current measurements. All these struggles lead to the following questions.

- What is the impact of the change?
- What should your new plan look like?
- How do you re-deploy resources?
- Does everyone in your organization agree with the changes?
- Is your business growing?
- Are the processes you have put in place scalable to new geographies?

This is the real opportunity gained through a formalized S&OP process: responding to changes in a timely manner.

Summary

You may still be sitting there thinking, 'I'm in a stable environment, with mature product lines. I have predictable demand. Is there anything in S&OP for me?'

The short answer is yes.

Personalize the DOS (Dangers, Opportunities, and Strengths) for your business. Come up with the compelling reason why you need to implement a formalized S&OP process.

The first step is knowing that you want to get started, closely followed by the question, 'where do I begin?'

Our strengths allow us to see opportunities for what they are—possibilities for improvement. But it's the three categories together—dangers, opportunities and strengths—that force us into action.

How do you discover what strengths you have to build on, and where to focus your efforts?

This brings us to the S&OP Self Assessment, which is all about understanding your current process and where you need to improve. And this is the topic of next month's article.



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