Plan your Supply Chain like Shock Absorbers in Your Car

In almost all enterprises, an age old question has been, where does planning end and where does execution begin? The answer has been a fuzzy line depending on whom you ask. The nirvana is to have a seamless integration of planning and execution, i.e. no ending and no beginning, just a seamless process. Another way to look at this is when do we stop being proactive and when do we leave things to be reactive. In this paper, we shall discuss how less planning is necessary if the ability to react is increased using technology.

Consider a simple example of planning to meet a friend at a location. Before we were spoiled with cell phones, we would accurately define time and location to meet. And if one did not show up on time, we would start wondering where they are and how much longer to wait and so on. So planning was critical and if things went wrong we had very few choices other than wait and wait! Now-a-days, we are much more reactive, because of technology. The normal mode is "I call you or text you, when I am close by." In the meantime, if something went wrong you would have real-time communication to re-plan. That is reacting to changes without too much planning. You can see that with technology, there is less planning, faster processes and real-time decision making.

Same thing is now true in the world of manufacturing. Technology can offer the means to be a lot faster and react to issues in real-time and therefore reduce the need for planning. But planning is still needed. Why? To be *responsive*. On the other hand, we execute to be *reliable*. For example, we must plan for an item that has a long lead-time to make sure we have it if and when it is needed so that we deliver good customer service and we reduce our cost of expediting. How little to plan and how much to react depends on what is necessary. Let me offer you a basic axiom to guide you in your decision of when to plan: That is *Least Commitment Planning*. In other words, no need to commit to any of the resources or purchasing unless you have to because if you don't, then you increase the cost of operations or drop service level. A good example of such trade-off can be found under **MEIO** solutions.

Another important question is how much planning, or to what level of detail do we need to plan? Consider an example of planning a road trip to visit family for Thanksgiving. You make a high level plan to decide on dates and approximate time based on expected traffic and school/work schedules assuming the car has enough capacity to take all the passengers. You also have a good idea of approximately how long it takes to get there if you have young kids in the back seat! Obviously you do not need to plan on the exact minute that you leave home, where and when you fill up, making sure that you bring the key to the car, closing all the doors and windows, you get the message. Much of the latter is done reactively. Using the technology, a few days before, you check how long it takes to get to your destination and send a message to your host regarding your estimated time of arrival. When you get in the car, execution begins combined with some short term planning that includes taking some short cuts and stopping for gas and coffee. At a much lower and detailed level of execution, your shock absorbers are taking all the bumps in the road in order to ensure a comfortable ride—this is completely reactive and no planning is done at this level. If the ride is not too comfortable because of the road condition, you do not change the entire plan and cancel the visit, you choose an alternative route to get back on schedule as fast as possible (this is called *Turnpike* planning).

When and if there is a traffic jam, you use technology to find an alternative route in real-time. If there is a breakdown you call for help in real-time and also send a message to your host updating them on your time of arrival. Thus taking care of unexpected issues in real-time even though they were not part of the original (S&OP) plan. How well you *execute* the plan depends on how good was your original plan of leaving the house early enough and mitigating the risks. At the same time, you use short term plans (S&OE) to avoid risks and/or to make up for the undesired events.

Using supply chain planning technology, you are in a position to run your S&OP solutions and inventory optimization to proactively become responsive and make high quality plans. In addition, you need to have execution systems that can translate the plan to actual executions and can respond to immediate changes in real-time. Thus we need to have an integrated system of S&OP combined with inventory planning that feeds into a system of Sales & Operation Execution (S&OE) to be able to react to all the bumps in the road using supply chain planning, factory planning and even sequencing to absorb all the shocks from the shop floor, including machine breakdowns, late arrival of supplies, demand changes, quality and yield issues and so on.

In summary S&OP helps with responsiveness and S&OE ensures reliability of deliveries. The more reactive you are the less planning is needed and vice versa. Technology enables you to react faster and perform planning more frequently to get as close to reactive planning as possible. The ability to react to changes implies less inventory and operation costs and much better customer service.

For more information on this topic as well as unified data models, please visit **www.adexa.com**

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