

Supply Chain Planning Systems—Can You Live without them?

✦ Systems enforce good practices and processes:

Companies spend a lot of time and money to design business processes but as their business changes or people change the processes are not followed or gradually changed. Systems *enforce* good practices and show (provide visibility) when something critical is not done. For example, having the capacity to respond to a customer can be done based on good data as to how much we have, how much we are using and how much more can be obtained. In the absence of good data and systems to do real-time analysis this becomes either guess work or left to people with years of experience. It is not clear how good the decision is made by the experts. Systems also enforce availability of good and reliable data, e.g. inventory, capacity, cost of suppliers to be used, potential shortages—all in almost real-time basis.

✦ More frequent planning:

The more frequently you plan, the less inventory you are likely to generate and better serve your customers. In the absence of systems planning can be done at best once a week. Even at that the models are inaccurate (using spreadsheets or MRP methodology etc), lack necessary detail and too high level. Imagine examining your plans based on changing demand, market condition, inventory availability, supplier capacity, and revenue goals twice a day rather than once a week or even once a day. This can have a huge impact on the company's performance in cost savings and customer delivery performance

✦ Streamlining processes:

Large companies have tens or even hundreds of sales people all over the world, each making their own forecast. How do you keep track of exceptions, how do you keep track of their accuracy and reward them for it? How do you ensure you know the exceptions (changes in forecast by more than (say) 5% from their previous forecast)?

How do you aggregate their forecast into product families? And how do you commit to them based on realistic availability of capacity at the same time ensuring that you are building the right product mix and meeting your revenue goals? These are all disparate business processes in sales, inventory and operation planning that systems can bring together, integrate and show visibility across different processes so that left hand knows what the right hand is doing.

✚ People cannot collect and calculate as fast as systems can:

It does not matter how many people you have assigned to respond to your prospects and customers, without a system, ATP would take days and weeks and would be inaccurate. Most companies use some made up delivery date based on standard lead-time for each product. The latter is obviously inaccurate and leads to either excess inventory or inadequate customer service levels. ATP, by its very nature has to check for inventory, current allocations, current capacity, current WIP, current supplier capacity etc etc. All of this information resides within different departments and geographically in different locations all over the world. How can one or group of individuals collect such information and respond to a customer with a realistic ATP in real-time? Systems are capable of doing this and performing this task by checking millions of variables including inventory, capacity current allocations as well as priorities of customers, mix of products, cost and even methods of delivery in order to ensure an accurate response. No matter how many experts you put on this, because of diversity of the data that is needed, it would take a long time, in fact, too long for the result to be useful and up-to-date. By the time you collect the data it is already old for analysis—systems can do this in real-time.

✚ Visibility and process integration:

As was mentioned earlier, SI&OP involves sales forecasting and planning, production, inventory planning, supplier availability as well as financial planning. How do you tie these processes together to ensure sales and financials meet their goals? How do you avoid hugging capacity for products that are not selling? How do you keep track of your forecast accuracy coming from your customers and allow for their over- or under-forecasting. Or more importantly reward them for their accuracy. For example one of our clients made an arrangement with their customers that if their forecast accuracy is above 90% then they will ensure above 98% delivery performance on Customer Requested Shipping Dates!

✚ Systems tie planning process to execution process:

What do you do when you receive the news of a potential late delivery from your supplier? What alternatives do you have? Can a faster method of transportation help? Would it be cost justified? Systems can do such analysis ahead of time, and/or when the event (data) is made known, and offer the best scenarios and options.

✚ Systems have modeling capability:

They predict events in the future—i.e. planning. Based on this systems can predict late orders, late production, lack of capacity, P/L forecast based on real supply chain constraints. They can also run scenarios when unexpected events occur, such as epidemics, strikes, market crash, With such predictions, one has more time and

options at hand to prevent inventory buildup and reduce cost or increase production to minimize cost and increase revenue respectively. In the absence of systems, arbitrary and subjective decisions are made based on people's experience, motives and relationships which may not necessarily be in the best interest of the company.

Less Reliance on individuals:

Based on the above point, systems reduce reliance on individuals and offer objective facts that can be examined by their merit. Individuals have a great deal of knowledge and experience that are very useful to the company. Systems can capture much of that knowledge and make more objective decisions and offer different scenarios that can be examined. In addition, systems can show the consequences of the decisions made, both the advantages as well as downsides of each scenario so that management can make informed decisions. As an example, consider the case when two product managers are asking for more capacity that can be allocated to them. Who gets how much and when? How do you make this decision one way or the other? Systems are capable of running both scenarios and more, and offer financial consequences of different scenarios that may make one decision more attractive than the other. Or, more interestingly, systems can capture surprises based on their track record. For example, one of them has consistently asked for more capacity than he could use!

Systems show inefficiencies in the operations:

Systems are capable of showing supplier issues as well as causes for customer service problems in an almost real-time manner. Supply chain planning systems are “active” rather than “passive” such as databases, ERP systems and spreadsheets. Active systems would know if there is too much inventory or obsolete inventory sitting somewhere. If some suppliers are consistently late causing late deliveries, systems can alert the users. If certain customer or sales person produces inaccurate forecast then system would create exception reports. If a customer's order can be delivered on time using substitute parts or made in some other locations at higher or lower cost, system would offer that as an alternative. None of the above can be done with traditional passive systems unless there is an expert who is actively looking for such alternatives. Systems can do this a lot faster and more efficiently. Systems have *speed*. Either show immediately the problem or predict the problem e.g. inventory build up or having excess inventory. Producing stuff that is not being sold or having too much in a DC.

Systems tell the Truth:

Systems Show KPI's as defined not as presented by the very people who are supposed to be measured by it—systems don't lie. Systems can keep track of and flag KPI's such as inventory reduction goals, customer delivery performance, and supplier performance based on contractual agreements and so on.

Systems are Holistic:

Systems can perform tasks which are almost impossible for a group of people to do all at the same time since their solutions are inter-dependent on each other's decisions. An example of that was ATP, mentioned earlier. Amongst others are Product mix allocation—how much of capacity is given to which product and Multi

echelon inventory optimization. In other words, for each product how much inventory do we keep at each level of supply chain in order to meet certain level of customer service. The different layers of inventory are production buffers, die banks, finished goods, DC inventory etc. In most cases, there are 10's or 100's of millions of dollars of inventory which are wasted by keeping the wrong mix and at an inferior delivery performance!

Systems have speed:

Systems can do everything much faster hence improve velocity of doing business, enhanced visibility and more agility when and if unexpected events occur—good or bad. Sudden increase in demand, supplier shut down because of epidemic or weather and so on. Systems examine different alternatives and offer viable solutions. Because of their speed, systems can do things as many times as needed, e.g. more frequent planning, more frequent forecasting, more frequent allocation of capacity etc. All of this results in less inventory and more revenue because capacity is allocated what sells and inventory is kept where needed.

A word about Excel:

As mentioned earlier, spreadsheets are “passive” and therefore do not alert what the issues are. They are programmed to do what the user wants to see rather than understanding the complexity of the supply chain. They do not integrate different business process and every department uses their own set of spreadsheets (an example of this was given above in SI&OP). Spreadsheets use fixed lead-times and are incapable of understanding capacity of the suppliers and tie them to inventory and customer request dates. Spreadsheets are incapable of examining all the different alternatives of ATP and CTP (Capacity to Promise). They are also incapable of scaling as the suppliers change, acquisitions are made, business grows, users change and so on. Spreadsheets have very little analysis capability such as MEIO or optimization. And they lack the ability to tie different KPI's based around the same parameters. For example how does one tie late deliveries to supplier delays vs unrealistic commit dates. Or how does one tie demand planning and sales forecasting to capacity optimization and inventory target levels using spreadsheets. The only way is through subjective means and extremely slow human intervention. Trusting a multi-billion dollar business to Spreadsheet's outcome is less than efficient and can hide many opportunities as well as not flagging flaws in decisions.

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