advisory board BRIEF

The Dilemma of PULL ?!

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I was once told by an industry sage that ***"the difference between a glut and allocation, is but one part"***. As the task of electronic assembly (and all the ancillary functions that go around it) becomes increasingly IT dependent, I chuckle that he was more right than he might have thought at the time.

Today in September, the industry is at the height (we can only hope) of the latest cycle of 'Product Allocation'. 'Allocation', in short (no pun intended), is when the aggregate demand for a particular device far exceeds the supply. Countless print pages have been devoted to what has come to be regarded as the most pronounced allocation cycle ever. A couple of culprits probably will come to define this cycle: more then just the PC is driving demand this time (ie. The Internet, Cell phones, PDAs, etc); and capital equipment was late coming onstream due to the longevity of the last downturn.

Whatever the situation or cause, our challenge as 'supply chain' participants is: to keep the supply flowing with the correct parts; to keep factories producing the right goods; to keep our customers (upstream & downstream) winning; and last, but not least, to make money.

As Eli Goldratt stated so well in "The Goal", the goal of any enterprise is to make money. In a manufacturing world, this means: Increasing throughput; Reducing Inventory (within the total chain); and reducing Operational Expense. In fact, these three manufacturing 'absolute truths', are at the heart of out customers' evolution to Pull Manufacturing shops (Pulling demand through the factory, vs. Pushing a forecast onto the shop floor).

However, given the current 'allocation cycle', each of Goldratt's three tenets would seem to be 'suicidal'! Intuitively, one might think…"Yikes, I should be stockpiling vital components, I should be building finished goods reserves, and my operational expense will undoubtedly climb!"

So the dilemma is defined! "How to run a worldclass manufacturing facility without having to stockpile vital components?"

It may come as a surprise to some in the manufacturing community, but this dilemma is shared within all levels of the supply community (i.e. component suppliers, distributors, and manufacturer's reps). Take my word for it…not having enough product to fill critical open orders, isn't 'pleasant'!

So against the backdrop of; shortened product live cycles; the rise of contract manufacturing; and the nature of components; how can you and your company be 'better then average' in tackling this dilemma?

My input can be boiled down to two key areas:

Open and RICH communication.

Forecast information. Although it is understood that "all sales forecasts are inaccurate", it is still the best available information. Make sharing this information with your entire supply chain part of your company's culture. Even better, share it electronically to increase velocity.

Problem identification becomes critical…regardless of where you are in the supply chain (supplier, rep, distributor, contract manufacturer, or OEM). Is there a component work around? What are the 'drop dead' quantities you require? Is an upgraded or downgraded part sufficient? Once the problem is identified, get everyone aligned on the solution. Luckily, with email and the Internet, keeping all stakeholders 'in the loop' is easier then ever.

Velocity of Information

Certainly, the huge expenditures for new IT platforms is being driven by this simple fact…there is a 'Need for Speed'. In a 'pull manufacturing' environment, pull signals can arrive anytime. Material requirements based on a 1-month batch cycle just can't efficiently feed a pull manufacturing shop. The velocity and frequency of sharing material requirements has become a competitive advantage for many Canadian Manufacturers. The same principles are as relevent to OEMs as it is for Contract Manufacturers.

This same 'need for speed', is also true for suppliers. New product information for example. High Tech companies, by definition, compete in the 'faster, better, cheaper' arena. It could be argued that not being aware of the latest supplier offering could put a company at a competitive disadvantage. Component obsolescence and 'End of Life' notifications is another key example. The collective supply base can always do a better job of getting this vital information into the hands of our Canadian OEMs and EMSI providers.

Consider the extremes

Considering both ends of an extreme is sometimes an effective way of illustrating a point. Let me walk through two fictional scenerios, showing how rich and frequent sharing of information can result in two very different results. In both cases, forecast information is only used to plan the material pipeline. Actual consumption is on a 'demand pull'.

A Inc.'s (the OEM) customers pull products from a minimal finished goods inventory. This signal, sets in motion, the manufacturing chain. This signal pulls completed electronic assemblies from B Inc., an EMSI (Electronic Manufacturing Service Industry) provider or contract assembler. This manufacturing signal in turn, pulls raw material from the electronic component distributor, C Inc.

A Inc.'s product has recently been announced and harnesses a relatively new microcontroller and popular RF device that allows a new price-performance point in its market. The product is highly configurable for different customers. Due to a highly successful sales strategy, A Inc.'s product looks like a 'home run' with bites from many customers.

B Inc. of course, wants to ensure it's manufacturing prowness delivers value to A Inc. B Inc.'s purchasing team, organized by commodity, have good knowledge of current commodity market conditions. Knowing the component make-up of A Inc.'s product, B Inc. starts to pressure A Inc. for a 3 and 6 month forecast.

C Inc. is a global electronic distributor with over 200 franchised component suppliers in the Americas servicing over 40,000 customers monthly. Its asset management team is also organized by commodity.

In the worst case senerio

A Inc.'s lack of a rigourous forecasting culture nets B Inc. a 'lump sum' forecast by quarter, spanning the next 6 months. B Inc.'s commodity team, facing 40+ week lead times, scramble to place orders with distributor C Inc. Additionally, because the

microcontroller is a masked device (for cost advantage), B Inc.'s business managers, need to secure a 'non cancellable' clause with A Inc. Due to the popularity of the RF device (ie.popular within the cell phone industry), B Inc.'s commodity managers fear for their ability to secure these 52 week lead time devices, but place orders, none the less, and start working to 'better the lead time'. Distributor C Inc. takes these 'new' orders and places the additional net demand on their suppliers.

Fast forward a month… as A Inc.'s sales and marketing efforts progress, it is apparent the code within the microcontroller needs 'tweaking'. No issue, it is decided that the first runs can be OTPs (One Time Programmables). However, OTPs are also in short supply, and the masked order is already in WIP. Additionally, field trials determine that those 'finicky' RF parts need to be changed. Yikes!, the newly defined parts are also long leadtime. A Inc. still is only able to supply 'bulk' forecasts. B Inc. scrambles to alter their orders with C Inc. C Inc. checks for coverage and alters its orders with their suppliers. Tensions rise throughout the chain.

Fast forward another month…A Inc.'s potentials fall through on one quarter of their initial prospects, but its largest potential gets signed for 4 times the 'forecasted volume'! The net forecast surprisingly comes very close to what was initially given B Inc.. However, because of the highly configurable nature of the product, B Inc. finds itself with serious mix problems with its orders on C Inc.

With C Inc.'s global reach and broad customer base, the majority of the mix problems are easily remedied, however, on 3 devices, its pipelines with its suppliers aren't sufficient. Oh, and the leadtime for new orders are still 52 weeks plus! Additionally, with a herculean effort involving all aspects of the supply chain, some of those initial 52 week lead time devices start rolling in…unfortunately it is determined that these were for some of the customers that didn't materialize.

Fast forward 9 months…A Inc.'s product ultimately was a market success. However, the supply chain is littered with dead and non-moving inventory. A Inc. owns masked microcontrollers it will probably use as nifty tie tacks at the next industry trade show. B Inc. owns stockpiles of what were 52 week lead time devices but are now readily available. C Inc.'s commodity managers were able to mitigate much of the downside on behalf of A Inc. , B Inc. and itself, however, C Inc. still finds itself with a mix issue. From an 'opportunity cost' perspective, each of A Inc., B Inc. & C Inc. missed incremental revenue while scarce resources were being consumed in a 'less then ideal' fashion.

Now consider the best case senerio

A Inc.'s forecasting culture nets B Inc. a judged monthly forecast by top level assembly spanning the next 6 months. B Inc.'s commodity team, facing 40+ week lead times, scramble to place all commodity orders with distributor C Inc. Recognizing the shallow ramp of the first two quarters, and the non-cancellable nature of a masked microcontroller, B Inc.'s business managers, convince A Inc., to use a OTP for the time being. Due to the popularity of the RF device (ie.popular within the cell phone industry), B Inc.'s commodity managers fear their ability to secure these 52 week lead time devices, but place orders, none the less and start working to 'better the lead time'. Distributor C Inc. takes these 'new' orders and places the additional net demand on their suppliers.

Fast forward a month… as A Inc.'s sales and marketing efforts progress, it is apparent the code within the microcontroller needs 'tweaking'. No issue, it was decided that the first runs can be OTPs, and they are already on order and being pipelined. Additionally, field trials determine that those 'finicky' RF parts need to be changed. Yikes, the newly defined parts are also long leadtime. B Inc. scrambles to alter their orders with C Inc. C Inc. checks for coverage and alters its orders with their suppliers.

Fast forward another month…A Inc.'s potentials fall through on one quarter of their initial prospects, but its largest potential gets signed for 4 times the 'forecasted volume'. Because of the judged rolling 6 month forecast given to B Inc. (updated twice already), B Inc.'s orders with C Inc. need only minor 'tweaking'.

With C Inc.'s global reach and broad customer base, the majority of the remaining mix problems are easily remedied. One remaining device proves particularly troublesome. C Inc.'s local account manager assigned to A Inc., orchestrates a conference call with her counterpart assigned to A Inc. Also, on the call is C Inc.'s local Field Application Engineer (FAE) covering A Inc., the manufacturer's rep, and the Inside Sales Rep. for B Inc. They discuss the shortage dilemma for this remaining part. After scouring the globe unsuccessfully for availability, it is determined that a similar part might be acceptable. After ensuring that all parties are in-synch with the effort. The FAE, investigates the substitution with A Inc. Luckily, the solution works, with no need for regulatory approval…disaster avoided!

Fast forward 9 months…A Inc.'s product ultimately was a market success. During month 4, a risk-benefit analysis was done to determine whether to move to a masked microcontroller. This was done. Because of the rolling 6 month forecast, and a good backlog status process from C Inc. to B Inc., B Inc. was able to gracefully alter backlog as leadtimes collapsed.

Since the launch, A Inc.'s supply chain agility was credited with winning a tough order at the largest customer of A Inc.'s competitor. Early indications from marketing & sales that this could be the decisive win, its been dreaming of.

During the last 10 months, B Inc.'s excellent inventory position allowed B Inc. to capitalize a new SMT line. Prospects for a new major OEM engagement which would run exclusively on this line, look promising.

C Inc.'s sales during the last 10 months are at record levels. C Inc. has expanded their specialized Supply Chain Management (SCM) team of material analysists, due to the continued rise in Contract Manufacturing and SCM engagements. C Inc.'s corporate fully endorses the investments due to the demonstrated win-win-win attitude of their Canadian team.

Finally, at the June industry trade show, A Inc., high quality logo pens are a huge hit !

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